DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: May 27, 2021

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): R402.4.1.2, R403.3.3, R403.3.4

PROPONENT INFORMATION

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PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

See attached information.

Proposed text change, addition or deletion (attach additional information as needed):

See attached information.

Supporting data and documents (attach additional information as needed)

See attached information

☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

☑ **This Comment is not original material, its source (if known) is as follows:** (such as material / code development proposal from a prior development cycle or proposal submitted to model code committee etc.)

This proposal would eliminate state-specific amendments to the model codes.

☑ **I would like to make an in-person presentation of my proposal.**

Release

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Proponent's Signature

Eric Lacey

Printed Name

PLEASE EMAIL (PREFERRED) TO DAS.CodesStandards@CT.GOV OR MAIL OR FAX (SEE BELOW)

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Hobbs, Darren

From: Eric Lacey <eric@reca-codes.com>
Sent: Thursday, May 27, 2021 3:36 PM
To: CodesStandards, DAS
Subject: RECA Energy Code Proposal
Attachments: Attachment to RECA CT Proposal 5-27-21.docx; RECA CT Energy Code Proposal 5-27-21.pdf

Dear Chairman Free,

As we indicated in our May 20 letter to the Code Amendments Subcommittee, RECA is submitting the attached proposal that would eliminate the state-specific weakening amendments to several sections of the energy code. RECA submitted a few proposals in the 2018 IECC review (CCP19032, CCP19033, and CCP19034) which would eliminate state-specific weakening amendments to the 2018 IECC, and we hope the Subcommittee will consider these again. The attached proposal brings about the same result through a different means – by eliminating the amendment language altogether, so that the unamended code language of the 2018 or 2021 IECC would apply. If there are any questions, please don't hesitate to email or call.

Thanks,
Eric

Eric Lacey, Chairman
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May 27, 2021 RECA Code Change Proposal

PROPOSAL INFORMATION

Description of change and reason for change:

As explained in our May 20, 2021 letter to the Code Amendments Subcommittee, the Responsible Energy Codes Alliance supports the adoption of the 2018 and 2021 IECC in Connecticut. Adopting the full 2021 IECC without state-specific amendments will provide the most energy-saving and carbon-reduction benefits for the owners of residential and commercial buildings. However, at a minimum, we recommend adopting the 2018 IECC and eliminating the state-specific weakening amendments incorporated into the 2020 Connecticut State Building Code.

RECA submitted several proposals in the previous update (CCP19032, CCP19033, and CCP19034) which would eliminate some of these amendments. We believe these proposals will still have the effect of bringing Connecticut's energy code closer to the 2018 IECC and continue to support them.

This new code change proposal takes a slightly different approach – It eliminates these same weakening amendments by striking the state-specific language from the Building Code. **Our intention in striking these amendments is the adoption of the unamended code language in either the 2018 or 2021 IECC.** We see no reason why Connecticut's energy code should differ from the model energy codes with respect to air tightness and duct leakage. It is well-documented that the air tightness testing and duct testing requirements of the 2018 and 2021 IECC save energy, maintain occupant comfort, and optimize building system performance. These objective tests serve as an important consumer protection, and the air tightness levels prescribed in the 2018 and 2021 IECC are feasible and a critical piece of the IECC's overall efficiency. Although we would prefer a complete, unamended adoption of the 2018 or 2021 IECC, at a minimum, we believe these weakening amendments should be eliminated.

Proposed text change, addition or deletion:

~~**(Amd) R402.4.1.2 Testing.** The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding three air changes per hour. Testing shall be conducted in accordance with ANSI/RESNET/ICC 380, ASTM E 779 or ASTM E 1827 and reported at a pressure of 0.2 inches w.g. (50 Pa). Where required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope. During testing:~~

~~1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weather stripping or other infiltration control measures.~~

2. Dampers, including exhaust, intake, makeup air, backdraft and flue dampers, shall be closed, but not sealed beyond intended infiltration control measures.

3. Interior doors, if installed at the time of the test, shall be open.

4. Exterior or interior terminations for continuous ventilation systems shall be closed and sealed.

5. Heating and cooling systems, if installed at the time of the test, shall be turned off.

6. Supply and return registers, if installed at the time of the test, shall be fully open.

Exception: Low-rise attached dwelling unit buildings in climate zone 5: For dwelling units greater than 850 square feet of floor area, the air leakage threshold shall be set at five air changes per hour. For dwelling units less than or equal to 850 square feet of floor area, the air leakage threshold shall be set at 6.5 air changes per hour. Testing shall be conducted with a blower door, unguarded, at a pressure of 0.2 inches w.g. (50 Pa). If guarded blower door testing (a test with one or more adjacent units pressurized, which should eliminate any leakage between units) is being performed, this exception is not allowed and the standard testing requirements of Section 402.4.1.2 apply. Where required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope. For buildings with more than 7 units, a sampling protocol is allowed by an approved third party. The sampling protocol requires the first seven units to be tested without any failures. Upon successful testing of those initial seven units, remaining units can be sampled at a rate of 1 in 7. If any sampled unit fails compliance with the maximum allowed air leakage rate, two additional units in the same sample set must be tested. If additional failures occur, all units in the sample set must be tested. In addition, all units in the next sample set must be tested for compliance before sampling of further units can be continued.

(Amd) R403.3.3 Duct testing (Mandatory). Ducts shall be pressure tested in accordance with ANSI/RESNET/ICC 380 to determine air leakage by one of the following methods:

1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. All registers shall be taped or otherwise sealed during the test.

2. Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.

Exceptions:

~~1. A duct air leakage test shall not be required where the ducts and air handlers are located entirely within the building thermal envelope.~~

~~2. Where ducts from an existing heating and cooling system are extended to an addition or are extended due to an alteration, duct systems with less than 40 linear feet (12.19 m) of new duct in unconditioned spaces shall not be required to be tested in accordance with Section 403.3.3.~~

~~A written report of the results of the test shall be signed by the party conducting the test and provided to the code official.~~

~~**(Amd) R403.3.4 Duct leakage (Prescriptive).** The total leakage of the ducts, where measured in accordance with Section R403.3.3, shall be as follows:~~

~~1. Rough-in test: The total leakage shall be less than or equal to 8 cubic feet per minute (226.5 L/min) per 100 square feet (9.29 m2) of conditioned floor area where the air handler is installed at the time of the test. Where the air handler is not installed at the time of the test, the total leakage shall be less than or equal to 3 cubic feet per minute (84.95 L/min) per 100 square feet (9.29 m2) of conditioned floor area.~~

~~2. Postconstruction test: Total leakage shall be less than or equal to 8 cubic feet per minute (226.5 L/min) per 100 square feet (9.29 m2) of conditioned floor area.~~

Supporting data and documents:

The air leakage testing and duct tightness requirements of the IECC have been adopted in many states, and have been maintained through several IECC update cycles.

- The prescriptive air tightness testing requirement of ≤3 ACH50 is consistent across the 2012, 2015, 2018, and 2021 IECC.
- The prescriptive duct tightness testing requirement of 4 cfm per 100 square feet is also consistent across the 2012, 2015, 2018, and 2021 IECC.
- Adoption of the full 2018 IECC would yield an additional 2.1% reduction in energy costs for Connecticut homeowners, saving an additional $782.52 over the first 30 years of the home's useful life. *See* https://www.energycodes.gov/sites/default/files/documents/ConnecticutResidentialCostEffectiveness_2018.pdf
- Adoption of the full 2021 IECC would yield an additional 7.44% reduction in energy costs for Connecticut homeowners. *See* U.S. Dep't of Energy, *Preliminary Energy Savings Analysis: 2021 IECC for Residential Buildings*, at 22 (May 2021), *available at* https://www.energycodes.gov/sites/default/files/documents/2021_IECC_PreliminaryDetermination_TSD.pdf.