

Public Comment CE105-16 WILLIAMS-C:

Proponent: Jeremiah Williams, representing U. S. Department of Energy (jeremiah.williams@ee.doe.gov) requests Approve as Modified by this Public Comment.

Modify as Follows:

2015 International Energy Conservation Code

C402.5.1.2.1 Building thermal envelope testing. The *building thermal envelope* shall be tested in accordance with ASTM E 779 or an equivalent method *approved* by the code official. The measured air leakage shall not exceed 0.40 cfm/ft² (0.2 L/s · m²) of the *building thermal envelope* area at a pressure differential of 0.3 inch water gauge (75 Pa).

Exceptions:

1. For buildings having greater than 50,000 square feet (5,000 m²) of gross conditioned floor area, air leakage testing need not be conducted on the whole building provided that the following portions of the building are tested:
 - 1.1. The entire floor area of all stories that have any spaces directly under a roof.
 - 1.2. The entire floor area of all stories that have a building entrance or loading dock.
 - 1.3. Representative above-grade sections of the building totaling not less than 25 percent of the wall area enclosing the remaining conditioned space.

The measured air leakages shall be area-weighted by the surface areas of the building envelope addressed in items 1.1 through 1.3, to determine a whole building value. The test of the areas in item 1.3 shall be applied to the remainder of the building envelope surface area not included in items 1.1 through 1.3.

2. Where the measured air leakage rate exceeds 0.40 cfm/ft² (2.0 L/s•m²) but does not exceed 0.60 cfm/ft² (3.0 L/s•m²), a diagnostic evaluation using smoke tracer or infrared imaging shall be conducted while the building is pressurized and any leaks noted shall be sealed where such sealing can be performed without destruction of existing building components. In addition, a visual inspection of the air barrier shall be conducted and any leaks noted shall be sealed where such sealing can be performed without destruction of existing building components. An additional report identifying the corrective actions taken to seal leaks shall be submitted to the code official and the building owner, and shall be deemed to satisfy the requirements of this section.

3. For group R-2 buildings, air leakage testing need not be conducted on the whole building provided that the following portions of the building are tested:
 - 3.1. All conditioned spaces not located within a dwelling unit
 - 3.2. All *dwelling units* that have any spaces directly under a roof or above a floor that is part of the *building thermal envelope*.
 - 3.3. Representative dwelling units that include not less than 25 percent of the dwelling units not tested in 3.2 and include not less than 25 percent of the total exterior wall area of the dwelling units not tested in 3.2.

Each tested dwelling unit and each other conditioned area in the building shall be verified as having an air leakage rate not exceeding 5.0 air changes per hour in Climate Zones 1 and 2, and 3.0 air changes per hour in Climate Zones 3 through 8. Testing shall be conducted in accordance with ASTM E 779 or ASTM E 1827 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Where required by the code official, testing shall be conducted by an approved third party, and as further required by the code official, such third party shall select the dwelling units for testing as required by item 3.3.

Commenter's Reason: For multi-family R-2 buildings, this public comment creates an additional path to air barrier testing that allows sampling and matches the requirements in the residential code. While this is slightly relaxed from the testing required for other buildings, as 0.40 cfm/ft² at 75 Pa is roughly equivalent to 2.5 air changes per hour at 50 Pa, it does provide testing for R-2 buildings that is appropriate for the construction.

The benefits stated in the original building statement remain.

Bibliography: See original reason statement.