

Proposed Modification to the 2018 IECC Commercial

Modify the following provision as follows:

C402.5 Air leakage—thermal envelope (Mandatory). The *thermal envelope* of buildings shall comply with Sections C402.5.1 through C402.5.8, or the building *thermal envelope* shall be tested in accordance with ASTM E 779 at a pressure differential of 0.3 inch water gauge (75 Pa) or an equivalent method approved by the code official and deemed to comply with the provisions of this section when the tested air leakage rate of the building thermal envelope is not greater than 0.40 cfm/ft² (2.0 L/s • m²). Where compliance is based on such testing, the building shall also comply with Sections C402.5.5, C402.5.6 and C402.5.7.

Exception: For *buildings* having over 50,000 ft² of *conditioned floor area*, air leakage testing shall be permitted to be conducted on less than the whole *building*, provided the following portions of the *building* are tested and their measured air leakage is area-weighted by the surface areas of the *building envelope*:

1. The entire floor area of all stories that have any spaces directly under a roof.
2. The entire floor area of all stories that have a *building entrance* or loading dock.
3. Representative *above-grade wall* sections of the *building* totaling at least 25% of the *above-grade wall* area enclosing the remaining *conditioned space*; floor area tested per (1) and (2) shall not be included in the 25%.

Reason Statement

The proposed change to Section C402.5 of the 2018 IECC will provide consistency with the continuous envelope air barrier testing requirement of ASHRAE Standard 90.1 Section 5.4.3.1.3 Exception (a). This exception allows the commercial building builder to perform an envelope air leakage test on a representative sample of the building envelope for buildings having a conditioned floor area of over 50,000 ft². The exception specifies the portions of the building that should be included in the sampling, requiring those areas with the highest potential of air leakage to be tested e.g. spaces directly under roofs and spaces that contain building entrances and loading docks. Building entrances are required to have vestibules which, if not installed properly, will increase the air leakage in the building.

Adding this exception to the testing requirements will provide consistency with the similar provision in ASHRAE 90.1 with no energy penalty. This exception may encourage more testing under the 2018 IECC versus complying with the materials and assemblies option in the code.