

**NCTCOG Approved Methodology for
Establishing Code Compliant Multifamily Residences based on
Measured Total Air Leakage Results
Guidance for Code Officials, Raters, and Builders**

The Energy and Green Advisory Board of the North Texas Council of Governments (NCTCOG) requested Energy Systems Lab of Texas A&M University (ESL) to review a proposal to implement a methodology for calculating outside air leakage based on measurement of total air leakage in multifamily and townhome units in climate zone 3.

The Mandatory Section R402.4 Air Leakage of the 2015 IECC requires that the *building thermal envelope* be tested and verified in accordance with R402.4.1.2. Measuring air leakage for multifamily buildings or dwelling units using an air leakage to outside test (i.e. guarded) can be costly and time prohibitive. This is because in order to isolate leakage only through the *building thermal envelope*, all leakage to adjacent units through adiabatic surfaces must be pressure neutralized. The methodology below therefore allows for the use of total air leakage testing for multifamily dwelling units that includes air leakage to the exterior and to adjacent units (i.e. unguarded) to show compliance with R402.4.1.2.

To demonstrate compliance using this methodology one of the two methods listed below must be followed by completing all of the measures listed. This increases the flexibility of the code without affecting stringency. This methodology has been approved for use by ESL, and the methodology applies only to jurisdictions in the NCTCOG area. To meet compliance using this methodology, one of the following methods should be followed:

1. Approved methodology for interior multifamily units:

Interior multifamily units with a measured, “unguarded” total air leakage result of 5.3 ACH₅₀ or less shall be considered as stringent as a code compliant unit.

2. Approved methodology for corner multifamily units:

Corner multifamily units with a measured, “unguarded” total leakage result of less than 5.0 ACH₅₀ shall be considered as stringent as a code compliant unit.

ESL is continuing their analysis of a methodology to calculate outside air leakage test results based on measure total air leakage test results. Additional guidance may be provided upon completion.

Please see <http://esl.tamu.edu/terp/documents/builders-info/> for copies of the ESL approval letters for this methodology.