



Setting the Standards for Home Energy Efficiency

Interpretation: Dwelling Unit Mechanical Ventilation Runtime & Controls

Designation IR 301-2019-002

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Reference: This request for interpretation refers to the requirements presented in
 Standard:
ANSI / RESNET /
ICC 301-2019

Page Number(s): Appendix B, B-53

Section(s): _____

Table(s): 4.2.2(1) and 4.5.2(1)

Relating to: _____

**Background
provided by
Requester:**

This two-part interpretation request relates to Dwelling-Unit Mechanical Ventilation Systems that rely on control systems to “provide dwelling-unit Ventilation at a known or measured airflow rate”.

A Dwelling-Unit Mechanical Ventilation System is defined in ANSI/RESNET/ICC 301-2019 as “a Ventilation system consisting of powered Ventilation equipment such as motor-driven fans and blowers and related mechanical components such as ducts, inlets, dampers, filters and associated control devices that provides dwelling-unit Ventilation at a known or measured airflow rate.”

In the Rated Home column of the Air exchange rate row of Table 4.2.2 (1), it states: “For residences without Dwelling-Unit Mechanical Ventilation Systems, or without measured airflow, or where $A_{ext}(i) < 0.5$ and the Mechanical Ventilation System is solely an Exhaust System, the Infiltration rate (j) shall be as determined above, but not less than 0.30 ACH.

In the Dwelling-Unit Mechanical Ventilation System fan energy row of Table 4.2.2 (1), with respect to what fan energy is modeled in the Energy Rating Reference Home, it states “None, except where a mechanical Ventilation system is specified by the Rated Home.”

The first question in this Interpretation Request relates to the issue where installed ventilation systems lack controls, or where such control systems are not set up, powered or wired to ensure the system provides continuous or intermittently programmed ventilation at the time of a rater’s final inspection. It is not currently clear in the standard if such systems then qualify as a “dwelling-unit mechanical ventilation systems” and what the impact is on air exchange rate and fan energy.

The second question is related to determining the “daily run hours”.

In Item 23 of Table 4.5.2 (1), one of the Minimum Rated Features for Dwelling-Unit Mechanical Ventilation Systems is “daily run hours”.

On page B-53 of Appendix B, the On-Site Inspection Protocols state if “the fan is equipped with a timer, document the run time for the fan. If the fan is set to run continuously, then document the run time as 24 hours.”

It is not currently clear in the standard whether the “daily run hours” shall be determined by the controller setting at the time of a rater’s final inspection, or shall it be set at the maximum possible runtime the controller could provide, or shall it be set to meet the runtime of ASHRAE 62.2-2013 assuming sufficient ventilation airflow is present to meet the standard?

(This statement should identify what is unclear or contradictory in the standard and why clarification is necessary.)

**Requester’s
Interpretation:**

- 1) Where Dwelling-Unit Mechanical Ventilation Systems are specified but at the time of rater inspection lack controls to provide continuous or programmed intermittent operation, or where controls are not powered, wired, or set-up to enable verification of mechanical ventilation system operation, the system does not meet the definition of a “Dwelling-Unit Mechanical Ventilation System,” and the Rated Home is therefore considered a residence “without Dwelling-Unit Mechanical Ventilation Systems” in the context of Air Exchange Rate.
- 2) With respect to “Dwelling-Unit Mechanical Ventilation System fan energy,” since the system was “specified”, fan energy would follow the requirements in the applicable column for the Energy Rating Reference Home and Rated Home. This is similar to the approach for systems “without measured airflow”.
- 3) Dwelling-Unit Mechanical Ventilation System “daily run hours” entered into the Approved Software Rating Tool shall be based on the ventilation controller run time setting present at time of rater final inspection.

*(State what you consider the clarification should be. **Your interpretation must be stated such that the SDC can answer “Yes” or “No”.** Note: Interpretations are solely the opinion of the SDC. There is no public review or comment incorporated in their development. Interpretations should not create new requirements for national consensus standards.)*

Question: Is this Interpretation correct?



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- SDC Answer:**
1. Yes
 2. No
 3. Yes

SDC
Comments:

- 1) Yes. To meet the definition of a “Dwelling-Unit Mechanical Ventilation System”, if the system is not running continuously, it must be verified and observed by the Rater to operate on an automatic or programmed schedule in order to provide ventilation at a “known or measured airflow rate”. If it is not verified to do so at the time of inspection, it does not meet the definition and cannot be modeled as a “Dwelling-Unit Mechanical Ventilation System”.
- 2) No. If the system is not operating because the “systems lack controls, or where such control systems are not set up, powered or wired to ensure the system provides continuous or intermittently programmed ventilation at the time of a rater’s final inspection”, that system is also not observed to be using fan energy, and no fan energy should be modeled in either the Reference or Rated Home. This system does not qualify as a “Dwelling-Unit Mechanical Ventilation System” with respect to air exchange rate or fan energy.
- 3) Yes. As noted in the Background provided by the Requester, ANSI/RESNET/ICC 301-2019 Appendix B is clear that the Rater is documenting the run time as present and verified at the time of inspection.