



Setting the Standards for Home Energy Efficiency

Interpretation: Whole House Mechanical Ventilation Runtime & Controls

Designation IR 301-2014-018

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Reference: This request for interpretation refers to the requirements presented in Standard:

ANSI / RESNET /
ICC 301-2014

Page Number(s): _____

Section(s): _____

Table(s): 4.2.2(1) and 4.4.2(1)

Relating to: _____

**Background
provided by
Requester:**

This two-part interpretation request relates to Whole-House Mechanical Ventilation Systems that rely on control systems to “satisfy a whole house ventilation rate” through a “programmed intermittent schedule”.

A Whole-House Mechanical Ventilation System is defined in ANSI/RESNET/ICC 301-2014 as “an exhaust system, supply system, or combination thereof that is designed to mechanically exchange indoor air with outdoor air when operating continuously or through a programmed intermittent schedule to satisfy a whole house ventilation rate.”

In the Rated Home column of the Air exchange rate row of Table 4.2.2 (1), it states: “For residences without Whole-House Mechanical Ventilation Systems, the measured infiltration rate^(e) but not less than 0.30 ach.”

In the Whole-House Mechanical ventilation 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 “whole-house 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 4.4.2 (1), one of the Minimum Rated Features for Whole-House Mechanical Ventilation Systems is “daily run 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 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 Whole-House 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 “Whole-House Mechanical Ventilation System,” and the Rated Home is therefore considered a residence “without Whole-House Mechanical Ventilation Systems” in the context of Air Exchange Rate.
- 2) With respect to “Whole-House 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 and as modified by MINHERS Addendum 39. This is similar to the approach for systems “without measured airflow”, in that same Addendum.
- 3) Whole-House 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?

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

SDC

Comments:

- 1) Yes. To meet the definition of a “Whole-House 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 intermittent schedule”. 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 “Whole-House 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 “Whole-House Mechanical Ventilation System” with respect to air exchange rate or fan energy.
- 3) Yes. Addendum N of ANSI/RESNET/ICC 301-2014 introduces Appendix B, where it is stated that the Rater is documenting the run time as present and verified at the time of inspection.