

**INTERPRETATION IC 62.2-2003-1 OF
ANSI/ASHRAE STANDARD 62.2-2003
Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings**

Approved 27 June 2004

Request from: Armin Rudd, Building Science Corporation, 726 E. Maple Street, Annville, PA 17003.

Reference: This request for interpretation refers to the requirements presented in ANSI/ASHRAE Standard 62.2-2003, Section 4.4, regarding intermittent ventilation systems.

Background: An entity has interpreted the last sentence of Standard 62.2-2003 Section 4.4, "If the system runs at least once every three hours, 1.0 can be used as the ventilation effectiveness," to mean that if the system runs at all within a 3 hour period, even for 1 second, that effectiveness = 1.0 is valid.

Their intent is to "pulse" the intermittent fan within a three hour period to be able to use effectiveness = 1.0, while making sure that the fan runs at least 1 hour in every 12 according to the last sentence in Section 4.3. They will allow over-ventilation during one 12-hour period to make up for under-ventilation during the next 12-hour period.

Building Science Corporation understood that the 62.2 intent was to provide the full required ventilation air flow within any given 3 hour period in order to use effectiveness = 1.0. For example, for a 3 bedroom, 2000 square foot house with 50 cfm continuous ventilation required, an intermittent system delivering 150 cfm and operating at .33 fractional on-time would need to run at least 1 hour out of every three. This would be supported by the reference to "each hour" in Sections 4.1 and 4.4, and by the example in Appendix C, Section C4.1, which states, "A fan operated 30% of the time with cycle times of four hours (six cycles per day)...", implying that the full amount of ventilation was provided within a 4-hour period, not a 3-hour period, hence the derated effectiveness.

Interpretation: For an intermittent whole-house mechanical ventilation system, must the system run enough to provide the equivalent required amount of ventilation air within a three-hour period in order to use 1.0 as the ventilation effectiveness?

If the interpretation answer is no, please provide guidance on how much runtime within a three hour period is sufficient. Will one second of operation within a three hour period be sufficient to use 1.0 as the ventilation effectiveness?

Question: Is this Interpretation correct?

Answer: Yes

Comments:

In order to use $\epsilon = 1.0$ for intermittent operation of whole house ventilation systems that run at least once every 3 hours, the fan flow rate, Q_f , calculation in equation 4.2 must use the fractional on-time during the 3-hr period