

**INTERPRETATION IC 62.2-2016-1 OF
ANSI/ASHRAE STANDARD 62.2-2016
Ventilation and Acceptable Indoor Air Quality in Residential Buildings**

Approved: June 24, 2017

Request from: Max Sherman, Lawrence Berkeley National Lab, 1 Cyclotron Road, Berkeley, CA 94720.

Reference: This request for interpretation refers to the definitions and requirements presented in ANSI/ASHRAE Standard 62.2-2016 (including the errata and Addenda k, l, q, and s) regarding the definitions of ventilation air and ventilation systems.

Background: The purpose of this standard is to define “...*the roles of and minimum requirements for mechanical and natural ventilation systems and the building envelope intended to provide acceptable indoor air quality (IAQ) in residential buildings.*” This refers to two types of ventilation systems: natural and mechanical. The standard does not define natural and mechanical ventilation systems (or means), but it does define natural and mechanical ventilation:

natural ventilation: ventilation occurring as a result of only natural forces, such as wind pressure or differences in air density, through intentional openings such as open windows and doors.

mechanical ventilation: the active process of supplying air to or removing air from an indoor space by powered equipment such as motor-driven fans and blowers but not by devices such as wind-driven turbine ventilators and mechanically operated windows.

Ventilation is defined as *the process of supplying outdoor air to or removing indoor air from a dwelling by natural or mechanical means. Such air may or may not have been conditioned.* This implies that there can be mechanical ventilation that is not ventilation.

Ventilation air is defined as *outdoor air delivered to a space that is intended to dilute airborne contaminants.*

Ventilation, infiltration, mechanical ventilation and natural ventilation are all defined as processes not as quantitative terms.

These definitions and their use in the standard appear to be incomplete or confusing, particularly in Section 4. (For example, recirculated air is mechanical ventilation but it is not ventilation by these definitions.) Ventilation systems exist that are not purely mechanical nor purely natural. Such systems may use combined natural and mechanical driving forces to induce air flow through ducts, openings or designed inlets. The title, purpose, and scope (TPS) of the standard would seem to suggest that all forms of ventilation that impact IAQ should be considered together, but some of the language suggests otherwise and thus it is not clear.

Interpretation No.1: “Ventilation air” must be outdoor air but it can be delivered by any means including but not limited to natural, mechanical or passive and combinations thereof.

Question No.1: Is Interpretation Number 1 correct?

Answer No.1: Yes

Interpretation No.2: The “and” in the phrase “mechanical and natural” used in the purpose of the standard and the “or” in the phrase “natural or mechanical” used in the definition of ventilation is inclusive (i.e. allowing combinations) not exclusive.

Question No.2: Is Interpretation Number 2 correct?

Answer No.2: Yes

Interpretation No.3: The three defined processes—*natural ventilation, mechanical ventilation* and *infiltration*--span all the ventilation processes covered by the TPS of this standard.

Question No.3: Is Interpretation Number 3 correct?

Answer No.3: Yes

Interpretation No.4: Q_{tot} , “continuous dwelling-unit ventilation with outdoor air at a rate...” and “required ventilation rate” from Section 4 refer to ventilation air flow rates.

Question No.4: Is Interpretation Number 4 correct?

Answer No.4: Yes

Interpretation No.5: Consider a ventilation system that consisted of a passive exhaust stack with a flow meter in it and a mechanical exhaust fan that adjusts its flow to make the combined exhaust flow some known amount. Such a system qualifies as a mechanical ventilation system for the purposes of Section 4.

Question No.5: Is Interpretation Number 5 correct?

Answer No.5: No. While the Standard is unclear in this regard, the system proposed is not entirely mechanical in nature. However, compliance for the proposed system could be evaluated under provisions of Section 4.6 for equivalency.

Interpretation No.6a: Consider a ventilation system that uses a central exhaust fan and designed air inlets-either can be fixed or variable. This system, including the air inlets, qualifies as a mechanical ventilation system.

Question No.6a: Is Interpretation Number 6a correct?

Answer No.6a: Yes

Interpretation No.6b: To seal the ventilation system, as could be required by a blower-door test method in Section 4.1.2, would require sealing the air inlets.

Question No.6b: Is Interpretation Number 6b correct?

Answer No.6b: No, ASTM E779 does not require sealing these types of air inlets.

Interpretation No.7: Sections 4.2 and 4.3 are not required for ventilation systems that meet Section 4.5 or 4.6, even if they have mechanical components.

Question No.7: Is Interpretation Number 7 correct?

Answer No.7: Yes

Interpretation No. 8: Assuming the documentation requirements of Section 4.6 (and Section 4.4) are met, a ventilation system that does not qualify as mechanical but provides the same ventilation air flow as required for a Section 4.1-compliant mechanical ventilation system would comply with Section 4.

Question No.8: Is Interpretation Number 8 correct?

Answer No.8: Yes

Interpretation No.9: The exception to Section 4.1.2 says that no ventilation fan is required when the infiltration is large enough. “Ventilation fan” is not a defined term, but this statement implies than no designed ventilation system of any kind is required by Section 4.

Question No.9: Is Interpretation Number 9 correct?

Answer No.9: Yes