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1791 Tullie Circle, NE - Atlanta, GA 30329-2305 USA - Tel 404.636.8400 Fax 404.321.5478 - http://www.ashrae.org

Mark Weber
Assistant Manager of Standards - American
E-mail@ashrae.org

MEMORANDUM

DATE: **August 17, 2000**

TO: **Requester**

FROM: **Mark Weber, Assistant Manager of Standards - American**

SUBJECT: **ANSI/ASHRAE Standard 62-1999, *Ventilation for Acceptable Indoor Air Quality***

Attached is an official interpretation of the subject standard. Originally issued as an interpretation of Standard 62-1989, but was approved and transferred to Standard 62-1999 on August 14, 2000, by the Standing Standards Project Committee (SSPC) 62.1. Since no changes were made to the relevant sections of the 1999 edition of the standard, no revisions were made to the interpretation as part of the transfer. This and other interpretations are currently available on the ASHRAE web site at www.ashrea.org/STANDARD/standa.htm.

Thank you for your interest in ASHRAE Standards.

Enclosure

INTERPRETATION IC 62-1999-33 OF
ASHRAE STANDARD 62-1999
VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY

TRANSFER TO 62-1999 APPROVED: August 14, 2000

Originally issued as interpretation of Standard 62-1989 (IC 62-1989-27) on January 26, 1997, but transferred to Standard 62-1999. Since no changes were made to the relevant sections of Standard 62-1999, no revisions were made to the interpretation as part of this transfer.

Request from: Mike Schell, Englehard Sensor Technology, 6489 Calle Real, Goleta, CA 93117.

References. This request refers to ANSI/ASHRAE 62-1989 subclauses 6.1.3 Ventilation Requirements, 6.1.3.4 Intermittent or Variable Occupancies, and Figure 4 Maximum Permissible Ventilation Lag Time.

Mr. Schell's letter provides the following background in two parts:

Engelhard Background No.1. In Interpretation IC 62-1989-23 of ANSI/ASHRAE Standard 62-1989, the comment in support of Answer 5h states that the use of demand control with the Ventilation Rate Procedure where the variable provision of 6.1.3.4 is applied is improper. "Comment. If the total outdoor air supply based on the occupied space is reduced during periods of less occupancy by demand control, it is improper to also apply the variable provision of 6.1.3.4."

Answer 5h supports the use of demand control with the Ventilation Rate Procedure as long as demand control is properly applied, the variable provision of 6.1.3.4 is not applied, and other requirements are met. This request seeks to clarify the requirements for proper use and implementation of demand control with the Ventilation Rate Procedure.

Engelhard Interpretation No. 1. It is consistent with the Ventilation Rate Procedure that demand control be permitted for use to reduce the total outdoor air supply during periods of less occupancy, providing the following conditions are met:

a) The variable provision of 6.1.3.4 is not applied to lower the estimated maximum occupancy for the purpose of reducing the design ventilation rate.

b) CO_2 is not being removed by methods other than dilution ventilation, such as gas phase sorption filtration (interpretation IC 62-1989-7).

c) The designer has not routinely presumed that lag ventilation will result in acceptable indoor air quality, but has considered the potential for "appreciable buildup of contaminants during the unoccupied hours," for instance "from materials of machines in building, microbially contaminated areas, or activities of maintenance personnel" (Interpretation IC 62-1989-7).

d) Where required, the multiple spaces requirements of 6.1.3.1 are used to determine the system outdoor air quantity using the corrected fraction of outdoor air.

e) Sensor location and setpoints are selected on the basis of achieving the rates in Table 2.

f) Method of demand control of outdoor air intake is properly implemented (See Englehard Interpretations No. 2 and 3 below).

Question 1. Is Engelhard Interpretation No. 1 correct?

Answer. Yes.

Comment. However, good practice and the rationale on which the ventilation rates in Table 2 are based, indicates the need for a non-zero base ventilation rate to handle non-occupant sources whenever the space is occupied.

Engelhard Background No. 2. The considerations presented in the first sentences of Section 6.1.3.4, Intermittent or Variable Occupancy, must always be taken into account when considering the use of demand control based on CO_2 levels. Designs must take into account the need to ensure increased outdoor air intake within the maximum permissible ventilation lag time as shown in Figure 4 of ANSI/ASHRAE Standard 62-1989.

Engelhard Interpretation No. 2. It is consistent with the Ventilation Rate Procedure that demand control be permitted for use to reduce the total outdoor air supply during periods of less occupancy if it is properly implemented using a make or break CO_2 controller to call for the design ventilation rate in accordance with the requirements of the Ventilation Rate Procedure and Table 2.

Question 2. Is Engelhard Interpretation No. 2 correct?

Answer. Yes.

Engelhard Interpretation No. 3. It is consistent with the Ventilation Rate Procedure that demand control be permitted for use to reduce the total outdoor air supply during periods of less occupancy, if it is properly implemented using a Proportional, Proportional-Integral, or Proportional-Integral-Derivative controller to control outdoor air intake, using the difference between indoor and outdoor CO_2 levels to meet the requirements of the Ventilation Rate Procedure and Table 2.

Question 3. Is Engelhard Interpretation No. 3 correct?

Answer. Yes.