

**Interpretation IC 170-2008-8 of  
ANSI/ASHRAE Standard 170-2008  
Ventilation of Health Care Facilities**

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**Request from:** Travis English ([Travis.R.English@kp.org](mailto:Travis.R.English@kp.org)), Kaiser Permanente, 1800 Harrison Street, Oakland, CA 94612.

**Reference:** This request for interpretation refers to the requirements in ANSI/ASHRAE/ASHE Standard 170-2008, Section 7 and Table 7-1, regarding air change rates.

**Background:** ASHRAE Standard 170 (S170) Section 7 states that the air change per hour (ACH) rates in Table 7-1 “*The ventilation requirements of this standard are minimums that provide control of environmental comfort, asepsis [infection control and prevention], and odor in health care facilities.*”

The inclusion of “*Minimum Total ACH*” rates is unique to S170 and to health-care facilities, which account for 4.5% of the US commercial building stock [1]. The remaining 95% of commercial buildings do not have minimum ACH requirements for achieving indoor air quality, odor control, or comfort. Those commercial buildings are covered by ASHRAE Standard 55 (S55) and ASHRAE Standard 62.1 (S62).

1. *Environmental comfort* – Environmental comfort for all other commercial buildings is covered by S55. Most design engineers are familiar with S55, since all buildings seeking the LEED certification are required to formally submit S55 compliance documentation. (There is a useful, web-based tool for comfort compliance calculations available at <http://www.cbe.berkeley.edu/comforttool/>). No minimum total ACH rates are required by S55.
2. *Odor* – Odor for all other commercial buildings is covered by S62.1. This includes spaces where odors are primarily a function of human occupancy (public assembly, religious worship), and spaces where odors are produced by human activity combined with space contaminants (food service, food sales, mercantile). No minimum total ACH rates are required for any space in S62.

Section 7.1.1.a and 7.1.1.c make it clear that the ACH rates are mandatory minimums. No exceptions are allowed. This implies they are critical to the opening statement made in Section 7.

By process of elimination, if “*Minimum Total ACH*” are not critical to comfort, and are not critical to odor control (else they would be required in all commercial buildings), they must be critical to infection control and prevention (which is unique to healthcare).

[1] CBECS. 2003. Overview of Commercial Buildings, 2003 – Full Report. Energy Information Administration.

**Interpretation:** Standard 170 asserts that *each* total air change rate listed in column 4 of table 7-1 is an established (i.e. research-based), mandatory requirement for infection control and

prevention (i.e. where 6 ACH is required, 5 ACH is demonstrably unacceptable to control or prevent infection).

**Question:** Is this interpretation correct?

**Answer:** No.

**Comments:** ASHRAE/ASHE Standard 170 is based on research, authoritative guidance (such as CDC) and/or values proven over many years to yield effective results within the varied uses and occupancies of health care facilities.