ADDENDA

ANSI/ASHRAE/ASHE Addendum ae to
ANSI/ASHRAE/ASHE Standard 170-2013

Ventilation of Health Care Facilities

Approved by the ASHRAE Standards Committee on September 16, 2014; by the ASHRAE Board of Directors on October 3, 2014; by the ASHE Board of Directors on August 19, 2014; and by the American National Standards Institute on October 6, 2014.

This addendum was approved by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the standard. The change submittal form, instructions, and deadlines may be obtained in electronic form from the ASHRAE website (www.ashrae.org) or in paper form from the Manager of Standards.

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 ISSN 1041-2336

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American Society for Healthcare Engineering
of the American Hospital Association

Approved American National Standard
ANSI
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SPECIAL NOTE

This American National Standard (ANS) is a national voluntary consensus standard developed under the auspices of ASHRAE. *Consensus* is defined by the American National Standards Institute (ANSI), of which ASHRAE is a member and which has approved this standard as an ANS, as "substantial agreement reached by directly and materially affected interest categories. This signifies the concurrence of more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that an effort be made toward their resolution." Compliance with this standard is voluntary until and unless a legal jurisdiction makes compliance mandatory through legislation.

ASHRAE obtains consensus through participation of its national and international members, associated societies, and public review.

ASHRAE Standards are prepared by a Project Committee appointed specifically for the purpose of writing the Standard. The Project Committee Chair and Vice-Chair must be members of ASHRAE; while other committee members may or may not be ASHRAE members, all must be technically qualified in the subject area of the Standard. Every effort is made to balance the concerned interests on all Project Committees.

The Manager of Standards of ASHRAE should be contacted for:

a. interpretation of the contents of this Standard,
b. participation in the next review of the Standard,
c. offering constructive criticism for improving the Standard, or
d. permission to reprint portions of the Standard.

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

This addendum represents several changes resulting from coordination with the 2010 Guidelines for Design and Construction of Health Care Facilities *(FGI Guidelines). Each change is keyed to the numbered sections below:*

(a) This change clarifies requirement to Standard 170.
(b) This change clarifies requirements of Standard 170.
(c) This change adds additional room design parameters to Table 7-1. Newborn intensive care design temperature ranges were revised in Addendum a.
(d) This change removes a reference to the 2010 FGI Guidelines from Standard 170.
(e) This change is intended to clarify more stringent requirements for the more serious exhaust airstreams within the standard.

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum ae to Standard 170-2013

(d) Delete the reference for further information from Section 6.1.2.1 as shown below.

6.1.2 Heating and Cooling Sources.

6.1.2.1 Provide heat sources and essential accessories in number and arrangement sufficient to accommodate the facility needs (reserve capacity), even when any one of the heat sources or essential accessories is not operating due to a breakdown or routine maintenance. The capacity of the remaining source(s) shall be sufficient to provide for domestic hot water, sterilization and dietary purposes and to provide heating for operating, delivery, birthing, labor, recovery, emergency, intensive care, nursery, and inpatient rooms. ~~(For further information, see FGI (2010) in Informative Appendix B.)~~ Fuel sufficient to support the owner's facility operation plan upon loss of fuel service shall be provided on site.

Exception: Reserve capacity is not required if the ASHRAE 99% heating dry-bulb temperature for the facility is greater than or equal to 25°F (–4°C).

(e) Revise Section 6.3.2 to clarify horizontal distance between the outdoor intake and more serious exhaust streams indicated as shown below.

6.3.2 Exhaust Discharges. Exhaust discharge outlets that discharge air from AII rooms, bronchoscopy rooms, emergency department waiting rooms, nuclear medicine laboratories, radiology waiting rooms, and laboratory chemical fume hoods shall

a. be designed so that all ductwork within the building is under negative pressure;

Exception: Ductwork located within mechanical equipment rooms. Positive-pressure exhaust ductwork located within mechanical equipment rooms shall be sealed in accordance with SMACNA duct leakage Seal Class A.[10]

b. discharge in a vertical direction at least 10 ft (3 m) above roof level and shall be located not less than ~~10~~ 25 ft horizontally from air intakes, openable windows/doors, or areas that are normally accessible to the public or maintenance personnel and that are higher in elevation than the exhaust discharge; and
c. be located such that they minimize the recirculation of exhausted air back into the building.

(a) Revise Section 7.1(a2) to clarify requirements in coordination with ASHRAE Standard 62.1-2010 as shown below. The remainder of Section 7.1 is unchanged.

7.1 General Requirements. The following general requirements shall apply for space ventilation:

a. Spaces shall be ventilated according to Table 7.1.
   1. [. . .]
   2. The ventilation rates in this table are intended to provide for comfort as well as for asepsis and odor control in ~~areas~~ spaces of a health care facility that directly affect patient care. Ventilation rates for ~~many areas~~ spaces not specified here ~~can be found in~~ shall be obtained from ANSI/ASHRAE Standard 62.1 (ASHRAE [2010b] in Informative Appendix B). Where ~~areas~~ spaces with prescribed rates in both Standard 62.1[12] and Table 7.1 of this standard exist, the higher of the two air change rates shall be used.

(b) Revise Section 7.2.1(e) as shown below. The remainder of Section 7.2.1 is unchanged.

7.2.1 Airborne Infection Isolation (AII) Rooms. Ventilation for AII rooms shall meet the following requirements whenever an infectious patient occupies the room:

[. . .]

e. The room envelope shall be sealed to ~~limit leakage airflow at~~ provide a minimum differential pressure of 0.01 in. wc (2.5 Pa) ~~differential pressure~~ across the envelope.

(b) Revise Section 7.2.2(a) as shown below. The remainder of Section 7.2.2 is unchanged.

7.2.2 Protective Environment (PE) Rooms. Ventilation for PE rooms shall meet the following requirements:

a. The room envelope shall be sealed to ~~limit leakage air flow at~~ provide a minimum differential pressure of 0.01 in. wc (2.5 Pa) ~~differential pressure~~ across the envelope.

(b) Revise Section 8.2(b) as shown below.

8.2 Planning for the HVAC Services in a New Facility. Design documents for new construction shall meet the following requirements:

[…]

b. *Mechanical Room Layout.* Mechanical room layout shall include sufficient space to provide manufacturer's minimum required ~~for~~ access to equipment for operation, maintenance, and replacement. Floors in mechanical rooms shall be sealed, including sealing around all penetrations, when they are above surgical suites and critical

(b) Revise Section 8.6(b) as shown below.

8.6 Duct Cleanliness. The duct supply system shall meet the following requirements for cleanliness:

[…]

b. The supply diffusers in operating rooms (Class B and C surgery), delivery rooms (Caesarean), trauma rooms (crisis or shock), wound intensive care rooms, protected environments (PE), and critical and intensive care rooms shall be opened and cleaned before the space is initially used and at regular intervals thereafter.

(c) Revise Table 7.1 as shown below. The remainder of Table 7.1 is unchanged.

TABLE 7-1 Design Parameters

Function of Space	Pressure Relationship to Adjacent Areas (n)	Minimum Outdoor ach	Minimum Total ach	All Room Air Exhausted Directly to Outdoors (j)	Air Recirculated by Means of Room Units (a)	Design Relative Humidity(k), (%)	Design Temperature (l), (°F/°C)
SURGERY AND CRITICAL CARE							
Newborn intensive care	Positive	2	6	N/R	No	30–60	72–78/22–26
INPATIENT NURSING							
Newborn nursery suite	N/R	2	6	N/R	No	30–60	72–78/22–26
Continued care nursery	N/R	2	6	N/R	No	30–60	72–78/22–26

POLICY STATEMENT DEFINING ASHRAE'S CONCERN FOR THE ENVIRONMENTAL IMPACT OF ITS ACTIVITIES

ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the standards and guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive technical committee structure, continue to generate up-to-date standards and guidelines where appropriate and adopt, recommend, and promote those new and revised standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating standards and guidelines.

The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

ASHRAE's primary concern for environmental impact will be at the site where equipment within ASHRAE's scope operates. However, energy source selection and the possible environmental impact due to the energy source and energy transportation will be considered where possible. Recommendations concerning energy source selection should be made by its members.

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