

# **ASHRAE/ASHE ADDENDA**

## **Ventilation of Health Care Facilities**

Approved by the ASHRAE Standards Committee on January 29, 2011; by the ASHRAE Board of Directors on February 2, 2011; by the American Society for Healthcare Engineering of the American Hospital Association on January 28, 2011; and by the American National Standards Institute on March 3, 2011.

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 Web site ([www.ashrae.org](http://www.ashrae.org)) or in paper form from the Manager of Standards.

The latest edition of an ASHRAE Standard may be purchased on the ASHRAE Web site ([www.ashrae.org](http://www.ashrae.org)) or from ASHRAE Customer Service, 1791 Tullie Circle, NE, Atlanta, GA 30329-2305. E-mail: [orders@ashrae.org](mailto:orders@ashrae.org). Fax: 404-321-5478. Telephone: 404-636-8400 (worldwide), or toll free 1-800-527-4723 (for orders in US and Canada). For reprint permission, go to [www.ashrae.org/permissions](http://www.ashrae.org/permissions).

© 2011 American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

ISSN 1041-2336



American Society of Heating, Refrigerating  
and Air-Conditioning Engineers, Inc.  
1791 Tullie Circle NE, Atlanta, GA 30329  
[www.ashrae.org](http://www.ashrae.org)



American Society for Healthcare Engineering  
of the American Hospital Association

**ASHRAE Standing Standard Project Committee 170**  
**Cognizant TC: TC 9.6, Healthcare Facilities**  
**SPLS Liaison: Byron W. Jones**

Paul T. Ninomura, *Chair\**  
Michael Patrick Sheerin, *Vice-Chair\**  
Chris P. Rousseau, *Secretary\**  
Judene M. Bartley\*  
Theodore Cohen\*  
John M. Dombrowski  
Douglas S. Erickson\*  
James (Skip) Gregory\*  
Jeffery M. Hardin  
Richard D. Hermans\*

Michael R. Keen\*  
Marvin L. Kloostra\*  
Peter Hogan Langowski\*  
Michael F. Mamayek\*  
Farhad Memarzadeh\*  
Richard D. Moeller  
Anand K. Seth\*  
Rajendra N. Shah  
Andrew J. Streifel\*  
Michael E. Woolsey\*

*\*Denotes members of voting status when the document was approved for publication.*

---

**ASHRAE STANDARDS COMMITTEE 2010–2011**

H. Michael Newman, *Chair*  
Carol E. Marriott, *Vice-Chair*  
Douglass S. Abramson  
Karim Amrane  
Robert G. Baker  
Hoy R. Bohanon, Jr.  
Steven F. Bruning  
Kenneth W. Cooper  
Martin Dieryckx  
Allan B. Fraser

Krishnan Gowri  
Maureen Grasso  
Cecily M. Grzywacz  
Richard L. Hall  
Nadar R. Jayaraman  
Byron W. Jones  
Jay A. Kohler  
Frank Myers

Janice C. Peterson  
Douglas T. Reindl  
Boggarm S. Setty  
James R. Tauby  
James K. Vallort  
William F. Walter  
Michael W. Woodford  
Craig P. Wray  
Hugh F. Crowther, *BOD ExO*  
William P. Bahnfleth, *CO*

Stephanie Reiniche, *Manager of Standards*

---

**SPECIAL NOTE**

This American National Standard (ANS) is a national voluntary consensus standard developed under the auspices of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (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.

**DISCLAIMER**

ASHRAE uses its best efforts to promulgate Standards and Guidelines for the benefit of the public in light of available information and accepted industry practices. However, ASHRAE does not guarantee, certify, or assure the safety or performance of any products, components, or systems tested, installed, or operated in accordance with ASHRAE's Standards or Guidelines or that any tests conducted under its Standards or Guidelines will be nonhazardous or free from risk.

**ASHRAE INDUSTRIAL ADVERTISING POLICY ON STANDARDS**

ASHRAE Standards and Guidelines are established to assist industry and the public by offering a uniform method of testing for rating purposes, by suggesting safe practices in designing and installing equipment, by providing proper definitions of this equipment, and by providing other information that may serve to guide the industry. The creation of ASHRAE Standards and Guidelines is determined by the need for them, and conformance to them is completely voluntary.

In referring to this Standard or Guideline and in marking of equipment and in advertising, no claim shall be made, either stated or implied, that the product has been approved by ASHRAE.

**(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 revises the requirements concerning the application of different types of ventilation diffusers in certain spaces.*

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

**Addendum g to Standard 170-2008**

*[Add the following definition to Section 3, "Definitions." The source of the new definition is the glossary of the FGI Guidelines for Design and Construction of Health Care Facilities, 2010 Edition.]*

**1. DEFINITIONS**

**patient care area:** an area used primarily for the provision of clinical care to patients. Such care includes monitoring, evaluation, and treatment services.

*[Revise Table 6-2 and the table notes as shown at the bottom of this page. See Item "a" of Section 6.7.2 and Item 2 of Section 7.2 of Standard 170-2008 for information relating to this change.]*

*[Add the following sentence to footnote "s" in Table 7-1, "Design Parameters." Note also that "immediate care" was added to the first sentence of this footnote by Addendum "b" to Standard 170-2008.]*

- s. For patient rooms, intermediate care, labor/delivery/recovery rooms and labor/delivery/recovery/postpartum rooms, four total ach shall be permitted when supplemental heating and/or cooling systems (radiant heating and cooling, baseboard heating, etc.) are used. For single-bed patient rooms using Group D diffusers, a minimum of six total air changes per hour shall be provided and calculated based on the volume from finished floor to 6 ft (1.83 m) above the floor.

*[Add the following new reference to Section 9, "Normative References."]*

<sup>10</sup>ASHRAE System Performance Evaluation and Design Guidelines for Displacement Ventilation, 2003. Quigley-Chen and Leon Glickman.

**TABLE 6-2 Supply Air Outlets**

<b>Space Designation (According to Function)</b>	<b>Supply Air Outlet Classification<sup>a</sup></b>
All class A, B, and C surgeries <sup>b</sup>	Primary supply diffusers Group E, non-aspirating additional supply diffusers Group E
Protective environment (PE) rooms	Group E, non-aspirating
Wound intensive care units (burn units)	Group E, non-aspirating
Trauma rooms (crisis or shock)	Group E, non-aspirating
All rooms	Group A or Group E
<u>Single-bed patient rooms<sup>c</sup></u>	<u>Group A, Group D, or Group E</u>
All other <u>patient care</u> spaces	Group A or Group E
<u>All other spaces</u>	<u>No requirement</u>

Note a: Refer to 2005 ASHRAE Handbook--Fundamentals, Chapter 35 Chapter 33, for definitions related to outlet classification and performance (see Informative Annex B: Bibliography).

Note b: Surgeons may require alternate air-distribution systems for some specialized surgeries. Such systems shall be considered acceptable if they meet or exceed the requirements of this standard.

Note c: Air-distribution systems using Group D diffusers shall meet the following requirements:

1. The system shall be designed according to "Design Guidelines" in Chapter 7 of ASHRAE System Performance Evaluation and Design Guidelines for Displacement Ventilation.<sup>10</sup>
2. The supply diffuser shall be located where it cannot be permanently blocked (e.g., opposite the foot of the bed.)
3. The room return/exhaust grille shall be located in the ceiling, approximately above the head of the patient bed.
4. The transfer grille to the toilet room shall be located above the occupied zone.