ADDENDA

ANSI/ASHRAE/ASHE Addendum u to
ANSI/ASHRAE/ASHE Standard 170-2021

Ventilation of Health Care Facilities

Approved by ASHRAE and the American National Standards Institute on July 31, 2025; and by the American Society for Health Care Engineering on July 18, 2025; .

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. Instructions for how to submit a change can be found on the ASHRAE® website (www.ashrae.org/continuous-maintenance).

The latest edition of an ASHRAE Standard may be purchased on the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 180 Technology Parkway, Peachtree Corners, GA 30092. E-mail: orders@ashrae.org. Fax: 678-539-2129. 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.

 ISSN 1041-2336

Approved American National Standard
ANSI
www.ansi.org

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 Senior 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

The glossary changes in Addendum u are coordinated with changes that the FGI Guidelines are incorporating, as evolving guidance on the planning and programing of these various treatment settings is prescribed by FGI.

The space ventilation tables have been updated with the addition of new FGI spaces that will be detailed in their upcoming revised editions.

Informative 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 u to Standard 170-2021

Revise Section 3 as shown. The remainder of Section 3 is unchanged. (Note, some of these terms were first added by Addendum d to Standard 170-2021. Addendum d can be downloaded at www.ashrae.org/addenda).

[. . .]

~~***Class 1 imaging room****: an imaging room designated for the performance of patient care activities, including diagnostic radiography, fluoroscopy, mammography, computed tomography (CT), ultrasound, magnetic resonance imaging (MRI), nuclear medicine, and other imaging modalities, including services that use natural orifice entry and do not pierce or penetrate natural protective membranes.*~~

~~***Class 2 imaging room****: an imaging room designated for the performance of patient care activities, including diagnostic and therapeutic procedures such as coronary, neurological, or peripheral angiography, including electrophysiology, cardiac catheterization, and interventional angiography and similar procedures.*~~

~~***Class 3 imaging room****: an imaging room designated for the performance of patient care activities, including invasive procedures and any other Class 2 procedure during which the patient will require physiological monitoring and is anticipated to require active life support. procedural invasive fluoroscopy: therapeutic or diagnostic invasive procedures that require fluoroscopic imaging (e.g., cardiac catheterization, interventional angiography, cardiac stenting, or implantation of devices). (Informative Note: These procedures are typically performed in a restricted or semirestricted area based on the classification of the imaging procedure being performed.)*~~

[. . .]

~~***invasive procedure:*** a procedure that is performed in an aseptic surgical field and penetrates the protective surfaces of a patient's body (e.g., subcutaneous tissue, mucous membranes, cornea). An invasive procedure may fall into one or more of the following categories:~~

- ~~a. Requires entry into, or opening of, a sterile body cavity (i.e., cranium, chest, abdomen, pelvis, joint spaces)~~
- ~~b. Involves insertion of an indwelling foreign body~~
- ~~c. Includes excision and grafting of burns that cover more than 20% of total body area~~
- ~~d. Does not begin as an open procedure but has a recognized measurable risk of requiring conversion to an open procedure~~

~~***Informative Notes:***~~

1. ~~Invasive procedures are performed in locations suitable to the technical requirements of the procedure with consideration of infection control and anesthetic risks and goals. Accepted standards of patient care are used to determine where an invasive procedure is performed. "Invasive procedure" is a broad term commonly used to describe procedures ranging from a simple injection to a major surgical procedure. For the purposes of this document, the term is limited to the above description. The intent is to differentiate those procedures that carry a high risk of infection, either by exposure of a usually sterile body cavity to the external environment or by implantation of a foreign object into a normally sterile site. Procedures performed through orifices normally~~

~~colonized with bacteria, and percutaneous procedures that do not involve an incision deeper than skin, would not be included in this definition.)~~

2. ~~Definition is adapted from the FGI Guidelines; see FGI [2018a, 2018b] in Informative Appendix E.)~~

[. . .]

~~operating room (OR):~~ ~~a room in the surgical suite that meets the requirements of a restricted area and is designated and equipped for performing invasive procedures. (***~~Informative Note:~~*** Definition is adapted from the FGI Guidelines; see FGI [2018a, 2018b] in Informative Appendix E.)~~

[. . .]

~~procedural fluoroscopy:~~ ~~therapeutic or diagnostic procedures that require fluoroscopic imaging (e.g., cardiac catheterization, interventional angiography, cardiac stenting, or implantation of devices). (***~~Informative Note:~~*** These procedures are typically performed in a restricted or semirestricted area based on the classification of the imaging procedure being performed.)~~

~~procedure room:~~ ~~a room designated for the performance of patient care that requires high-level disinfection or sterile instruments and some environmental controls but is not required to be performed with the environmental controls of an operating room. (***~~Informative Note:~~*** Definition is adapted from the FGI Guidelines; see FGI [2018a, 2018b] in Informative Appendix E.)~~

[. . .]

~~restricted area:~~ ~~a designated space in the semirestricted area of the surgical suite that can only be accessed through a semirestricted area. The restricted access is primarily intended to support a high level of asepsis control, not necessarily for security purposes. Traffic in the restricted area is limited to authorized personnel and patients. Personnel in restricted areas are required to wear surgical attire and cover head and facial hair. Masks are required where open sterile supplies or scrubbed persons may be located. (***~~Informative Note:~~*** Definition is adapted from the FGI Guidelines; see FGI [2022a, 2022b] in Informative Appendix E.)~~

[. . .]

Revise Table 7-1 and relate notes as shown. The remainder of Table 7-1 is unchanged.

Table 7-1 Design Parameters—Inpatient Spaces

Function of Space (ee)	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)	Unoccupied Turndown	Minimum Filter Efficiencies (cc)	Design Relative Humidity (k), %	Design Temperature (l), °F/°C
[. . .]									
DIAGNOSTIC AND TREATMENT									
[. . .]									
~~Gastrointestinal~~E~~e~~ndoscopy procedure room *(FGI 2.2-3.11.2 & Table 2.1-1)* (x)	NR	2	6	NR	No	Yes	MERV-8	20-60	68-73/20-23
[. . .]									

Normative Notes for Table 7-1 (continued):

[. . .]

x. If the planned space is designated in the organization's operational plan to be used for bronchoscopy and gastrointestinal and other endoscopy services, the design parameters for "bronchoscopy, sputum collection, and pentamidine administration" shall be used.

Revise Table 8-1 and related notes as shown. The remainder of Table 8-1 is unchanged. (Note, the text below reflects changes previously made by Addendum h to Standard 170-2021. Addendum h can be downloaded at www.ashrae.org/addenda.)

Table 8-1 Design Parameters—Specialized Outpatient Spaces

Function of Space (f)	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)	Unoccupied Turndown	Minimum Filter Efficiencies (c)	Design Relative Humidity (k), %	Design Temperature (l), °F/°C
[. . .]									
DIAGNOSTIC AND TREATMENT *(Continued)*									
Examination/observation *(FGI 2.1–~~3.2.1~~3.2.2.2)*	NR	2	4	NR	NR	Yes	MERV-8	Max 60	70–75/21–24
[. . .]									
Short stay patient room	NR	2	4	NR	NR	Yes	MERV-8	Max 60	70–75/21–24
Sleep testing room	NR	2	4	NR	NR	Yes	MERV-8	Max 60	70–75/21–24
[. . .]									

Normative Notes for Table 8-1:

[. . .]

h. If the planned space is designated in the organization's operational plan to be used for bronchoscopy and gastrointestinal and other endoscopy services, the design parameters for "bronchoscopy, sputum collection, and pentamidine administration" shall be used.

[. . .]

Revise Table 8-2 as shown. The remainder of Table 8-2 is unchanged.

Table 8-2 Design Parameters—General Outpatient Spaces (q)

Function of Space (f)	Pressure Relationship to Adjacent Areas (d)	ach Design Option: Min. Outdoor ach (q)	ach Design Option: Min. Total ach (q)	All Room Air Exhausted Directly to Outdoors (j)	Air Recirculated by Means of Room Units (a)	Unoccupied Turndown	Min. Filter Efficiencies (c)	Design RH% (i)	Design Temperature °F/°C (k)	R_p-R_a Air-Class Design Option: Air Class (q)	R_p cfm/(L·s)/ person and Min. Space Population (q)	R_a cfm/ft/ (L·s/m) (q)
GENERAL DIAGNOSTIC AND TREATMENT												
[. . .]												
Behavioral and mental health observation room/ area *(FGI 2.12-3.3)*	NR	2	3	NR	NR	Yes	MERV-8	NR	70–75/21–24	1	5 (2.5)/2	0.06/(0.3)
Behavioral and mental health examination room *(FGI 2.11-3.2.2)*	NR	2	3	NR	NR	Yes	MERV-8	NR	70–75/21–24	1	5 (2.5)/2	0.06/(0.3)
Behavioral and mental health central milieu room *(FGI 2.11-3.2.4)*	NR	2	3	NR	NR	Yes	MERV-8	NR	70–75/21–24	1	5 (2.5)/2	0.06/(0.3)
Behavioral and mental health group room *(FGI 2.11-3.2.5)*	NR	2	3	NR	NR	Yes	MERV-8	NR	70–75/21–24	1	5 (2.5)/2	0.06/(0.3)
[. . .]												

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.

ASHRAE · 180 Technology Parkway · Peachtree Corners, GA 30092 · www.ashrae.org

About ASHRAE

Founded in 1894, ASHRAE is a global professional society committed to serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration, and their allied fields.

As an industry leader in research, standards writing, publishing, certification, and continuing education, ASHRAE and its members are dedicated to promoting a healthy and sustainable built environment for all, through strategic partnerships with organizations in the HVAC&R community and across related industries.

To stay current with this and other ASHRAE Standards and Guidelines, visit www.ashrae.org/standards, and connect on LinkedIn, Facebook, Twitter, and YouTube.

Visit the ASHRAE Bookstore

ASHRAE offers its Standards and Guidelines in print, as immediately downloadable PDFs, and via ASHRAE Digital Collections, which provides online access with automatic updates as well as historical versions of publications. Selected Standards and Guidelines are also offered in redline versions that indicate the changes made between the active Standard or Guideline and its previous version. For more information, visit the Standards and Guidelines section of the ASHRAE Bookstore at www.ashrae.org/bookstore.

IMPORTANT NOTICES ABOUT THIS STANDARD

To ensure that you have all of the approved addenda, errata, and interpretations for this Standard, visit www.ashrae.org/standards to download them free of charge.

Addenda, errata, and interpretations for ASHRAE Standards and Guidelines are no longer distributed with copies of the Standards and Guidelines. ASHRAE provides these addenda, errata, and interpretations only in electronic form to promote more sustainable use of resources.

7/25