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ANSI/ASHRAE/ASHE Standard 170-2025
Ventilation of Health Care Facilities

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Preview

NOTE

Approved addenda, errata, or interpretations for this standard can be downloaded free of charge from the ASHRAE website at www.ashrae.org/technology.

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(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 2025 edition of ASHRAE/ASHE Standard 170 includes significant improvements to the 2021 edition. The 2025 edition continues its collaboration with FGI and the upcoming 2026 publications of the following codes:

- *FGI Code for Planning and Design of Hospitals*
- *FGI Code for Planning and Design of Outpatient Settings*
- *FGI Code for Planning and Design of Residential Care and Support Settings*

As a continuous maintenance document, Standard 170 publishes addenda continually and updates on a four-year cycle in alignment with the FGI documents.

Improvements to the 2025 edition include the following:

- *Addition of requirements for the optional use of natural ventilation*
- *Calculation of total outdoor air at the systems level for systems serving both Standards 170 and 62.1 spaces*
- *Updated requirements for Class 2 and 3 imaging rooms and their associated nonimaging spaces and clarification regarding nuclear medicine*
- *Clarification of unoccupied turndown requirements in outpatient spaces*
- *Clarification of separation distances and stack discharge heights based on complex situations*
- *Additional function of space types for behavioral health*
- *Updated cooling and heating reserve capacity and fuel on-site requirements*
- *Reorganized and updated Section 10 for ventilation during construction*
- *Indication of equivalent acceptable alternative filtration testing requirements to allow for easier international use of the standard*
- *Updates to have similar requirements for similar space types across the different tables, when appropriate*
- *Clarification of bronchoscopy requirements*
- *Provision of new space types to coordinate with FGI 2026 space types*

The committee appreciates the hard work invested in this edition by everyone who participated. We are grateful for the partnership with FGI and other ASHRAE committees. The committee also appreciates the feedback received from the public review and continuous maintenance proposal processes. Future input from the public is always welcome.

This standard does not constitute a design guide. Rather, it comprises a set of minimum requirements intended for adoption by code-enforcing agencies. For wide-ranging guidance, we refer the user to ASHRAE Handbook—HVAC Applications, HVAC Design Manual for Hospitals and Clinics, and ASHRAE/ASHE Guideline 43-2025, Operations Guideline for Ventilation of Health Care Facilities.

Standard 170 originated with an agreement between ASHRAE and FGI (publishers of the FGI Codes/Guidelines) that an ASHRAE standard would provide the best location for ventilation requirements for the health care industry. The American Society for Health Care Engineering (ASHE) was also included in this process, which resulted in the initial (2008) edition of this standard—the first standard jointly sponsored by ASHRAE and ASHE.

1. PURPOSE

The purpose of this standard is to define ventilation system design requirements that provide environmental control in health care facilities.

2. SCOPE

2.1 The requirements in this standard apply to patient care areas, resident care areas, and related support areas within health care facilities.

2.2 This standard applies to new buildings, additions to existing buildings, and those alterations to existing buildings that are identified within this standard.

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2.3 This standard considers chemical, physical, and biological contaminants that can affect the delivery of medical care to patients and residents; the convalescence of patients and residents; and the safety of patients, residents, health care workers, and visitors.

2.4 This standard establishes design requirements for temperature and humidity.

2.5 This standard establishes design requirements for odor control and asepsis.

2.6 This standard establishes design requirements for ventilation rates, including, but not limited to, outdoor air to serve health care facilities.

2.7 This standard does not establish comprehensive thermal comfort design requirements.

3. DEFINITIONS

absorption distance: the distance downstream of a humidifier that is required for all moisture to be absorbed into the airstream.

addition: an extension or increase in floor area or height of a building, building system, or equipment.

airborne infection isolation (AII): the isolation of patients infected with organisms spread by airborne droplet nuclei less than 5 µm in diameter. For the purposes of this standard, the abbreviation "AII" refers to the room that provides isolation. (***Informative Note:*** See *FGI Codes* [F1,F2,F3] and CDC guidance [F4,F5] in Informative Appendix F.)

airborne infection isolation (AII) room: a room that is designed according to the requirements of this standard and that is intended to provide airborne infection isolation.

alteration: a significant change in the function or size of a space, in the use of its systems, or in the use of its equipment, either through rearrangement, replacement, or addition. Routine maintenance and service shall not constitute an alteration.

authority having jurisdiction (AHJ): the agent or agency responsible for enforcing this standard.

average velocity: the volumetric flow rate obtained by dividing the air quantity issuing from an air distribution device by the nominal face area of the device.

building: a structure that is wholly or partially enclosed within exterior walls and a roof, or within exterior and party walls and a roof, and that affords shelter to persons, animals, or property. In this standard, a building is a structure intended for use as a hospital or health care facility.

equipment: devices for heating, ventilating, and/or air conditioning, including, but not limited to, furnaces, boilers, air conditioners, heat pumps, chillers, and heat exchangers.

facility: a discrete physical entity composed of various functional units as described in the *FGI Codes*. (***Informative Note:*** This may be a portion of a building or a portion of a floor within a building. (For more information, refer to the *FGI Codes* [F1,F2,F3] in Informative Appendix F.)

health care facility: an inpatient, outpatient, or residential health, care, and support facility.

heating and cooling central systems: systems that provide heating or cooling fluid for distribution via pumps or pressure to more than a single air-distribution system in the facility.

HEPA filter: a high-efficiency particulate air (HEPA) filter is a particulate air filter tested to a minimum particle capture efficiency value according to one of the following test methods:

a. IEST RP-CC001—Minimum efficiency of Type A of 99.97% at 0.3 µm particles
b. EN-1822—Minimum efficiency of Type H13 of 99.95% at MPPS (most penetrating particle size)
c. ISO 29463—Minimum efficiency of Class 35H of 99.95% at MPPS (most penetrating particle size)

high-risk immunocompromised patients: patients who have the greatest risk of infection caused by airborne or waterborne microorganisms. These patients include, but are not limited to, allogeneic stem-cell transplant patients and intensive chemotherapy patients.

hybrid operating room: a room that meets the definition of an operating room (OR) and has permanently installed equipment to enable diagnostic imaging before, during, and after surgical procedures. (***Informative Note:*** This space is functionally equivalent to Class 3 imaging rooms. Imaging equipment may include MRI, fixed single-plane and bi-plane tomographic imaging systems, and computed tomography equipment. Use of portable imaging technology does not make an OR a hybrid operating room.)

immunocompromised patients: patients whose immune mechanisms are deficient because of immunologic disorders, chronic diseases, or immunosuppressive therapy.

Informative Notes:

1. Examples of immunologic disorders include human immunodeficiency virus (HIV) infection or congenital immune deficiency syndrome.
2. Examples of chronic diseases include diabetes, cancer, emphysema, or cardiac failure.

PUBLIC REVIEW