

# STANDARD

**ANSI/ASHRAE/ASHE Standard 170-2017**  
(Supersedes ANSI/ASHRAE/ASHE Standard 170-2013)  
Includes ANSI/ASHRAE/ASHE addenda listed in Appendix C

# Ventilation of Health Care Facilities

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**NOTE**

**Approved addenda, errata, or interpretations for this standard can be downloaded free of charge from the ASHRAE website at [www.ashrae.org/technology](http://www.ashrae.org/technology).**

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## FOREWORD

Standard 170 originated with an agreement between ASHRAE and the Facility Guidelines Institute (publishers of the Guidelines for Design and Construction of Health Care Facilities) that an ASHRAE standard would provide the best location for ventilation requirements for the health care industry. The American Society of 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.

This 2017 edition to the standard includes a number of significant improvements to the 2013 edition. As a continuous maintenance document, Standard 170 is updated on a four-year cycle in concert with documents published by FGI.

This standard does not constitute a design guide. Rather it comprises a set of minimum requirements intended for adoption by code-enforcing agencies. Best practices are provided by other ASHRAE publications, such as ASHRAE Handbook—HVAC Applications and HVAC Design Manual for Hospitals and Clinics.

The 2017 edition includes several significant improvements:

- The addition of adiabatic humidifiers as an acceptable type of humidifier
- A new type of exam room with lower requirements for less acute applications
- Clarification that controls to change pressure relationships between spaces are prohibited for all spaces, not only airborne infection isolation and protective environment rooms
- Reduction in requirements for electroconvulsive therapy procedure rooms
- Reduction in requirements for laboratories when allowed by certain calculations
- Higher requirements for higher hazard exhaust airstreams
- Coordination of space temperature requirements in the Sterile Processing Department with other industry groups
- Clarification of the definition of the primary diffuser array in operating rooms

The 2017 edition was also editorially reformatted into three sections: hospital spaces, outpatient spaces, and nursing home spaces. This change allows for easier coordination between the standard and FGI documents, which, as of the 2018 edition, will consist of three separate books:

- Guidelines for the Design and Construction of Hospitals
- Guidelines for the Design and Construction of Residential Health, Care, and Support Facilities

- Guidelines for the Design and Construction of Outpatient Facilities

Standard 170 will be included in the *Hospitals and Outpatient Facilities* books.

Due to timing constraints, these three sections in the standard are identical. Changes to help differentiate outpatient and residential health, care, and support requirements from hospital requirements are currently undergoing final publication approval and will be published as Addendum n. The reformat was included in this edition to simplify the incorporation of these upcoming changes. As always, the standard does not dictate which types of spaces are required in which types of facilities. The requirements for spaces that do not exist in any given facility type may be ignored.

The committee appreciates the hard work invested in this edition by everyone who participated. The committee also appreciates the feedback received from the addendum public review and continuous maintenance proposal processes. Additional future input from the public is welcome.

## 1. PURPOSE

The purpose of this standard is to define ventilation system design requirements that provide environmental control for comfort, asepsis, and odor in health care facilities.

## 2. SCOPE

**2.1** The requirements in this standard apply to patient care areas and related support areas within health care facilities, including hospitals, nursing facilities, and outpatient 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.

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

## 3. DEFINITIONS

**absorption distance:** the distance downstream of a humidifier 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  $\mu\text{m}$  in diameter. For the purposes of this standard, the abbreviation “AII” refers to the room that provides isolation.

**Informative Note:** See FGI (2014), CDC (2003), and CDC (2005) in Appendix B.

**airborne infection isolation 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.