ADDENDA

**ANSI/ASHRAE/ASHE Addendum f to**
**ANSI/ASHRAE/ASHE Standard 170-2021**

# Ventilation of Health Care Facilities

Approved by ASHRAE and the American National Standards Institute on June 30, 2022, and by the American Society for Health Care Engineering on June 1, 2022.

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 (https://www.ashrae.org/continuous-maintenance).

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

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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.

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## FOREWORD

*Healthcare facilities often have a mixture of spaces within the scope of Standard 170 and Standard 62.1. Although Standard 170 gives the option to use the Standard 62.1 Ventilation Rate Procedure for outdoor air calculation, there is no clear direction on how to calculate the total outdoor air at the system levels for systems serving both 170 and 62.1 spaces. Addendum f clarifies how to calculate this. A working group of members from both SSPC170 and SSPC62.1 investigated the use of four possible calculation methods and selected the most appropriate method, which was tested on 14 actual healthcare projects*

***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 f to Standard 170-2021

***Revise Section 7.1(a)(6) as shown.***

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

a. Spaces shall be ventilated according to Table 7-1.

[ . . . ]

6. For air-handling systems serving multiple spaces, system minimum outdoor air quantity shall be calculated using one of the following methods:
   i. For systems serving only spaces within the scope of this standard, system minimum outdoor air quantity for an air-handling system shall be calculated as the sum of the individual space requirements as defined by this standard.
   ~~ii. System minimum outdoor air quantity shall be calculated by the Ventilation Rate Procedure (multiple-zone formula) of ASHRAE Standard 62.1[1]. The minimum outdoor air change rate listed in this standard shall be interpreted as the zone outdoor airflow ($V_{oz}$) for purposes of this calculation.~~
   ii. For systems serving spaces both in this standard and in ASHRAE Standard 62.1, system minimum outdoor air quantity for an air-handling system shall be calculated as the sum of
      (a) the outdoor air quantity required for spaces in the scope of this standard as calculated in Section 7.1(a)(6)(i) plus
      (b) the design outdoor air intake flow ($V_{ot}$) required for spaces in the scope of ASHRAE Standard 62.1 as calculated by ASHRAE Standard 62.1.

      ***Informative Note:*** The calculation method specified in Section 7.1(a)(6)(i) does not use diversity ($D$), zone air distribution effectiveness ($E_z$), and system ventilation efficiency ($E_v$) from ASHRAE Standard 62.1.

***Revise Section 8.1(a)(6) as shown.***

**8.1 Specialized Outpatient Facility Requirements.** [ . . . ]

a. Spaces shall be ventilated according to Table 8-1.

[ . . . ]

6. For air-handling systems serving multiple spaces, system minimum outdoor air quantity shall be calculated using one of the following methods:
   i. For systems serving only spaces within the scope of this standard, system minimum outdoor air quantity for an air-handling system shall be calculated as the sum of the individual space requirements as defined by this standard.
   ~~ii. System minimum outdoor air quantity shall be calculated by the Ventilation Rate Procedure (multiple-zone formula) of ASHRAE Standard 62.1[1]. The minimum outdoor air change rate listed in this standard shall be interpreted as the zone outdoor airflow ($V_{oz}$) for purposes of this calculation.~~

ii. For systems serving spaces both in this standard and in ASHRAE Standard 62.1, system minimum outdoor air quantity for an air-handling system shall be calculated as the sum of

(a) the outdoor air quantity required for spaces in the scope of this standard as calculated in Section 8.1(a)(6)(i) plus

(b) the design outdoor air intake flow ($V_{ot}$) required for spaces in the scope of ASHRAE Standard 62.1 as calculated by ASHRAE Standard 62.1

***Informative Note:*** The calculation method specified in Section 8.1(a)(6)(i) does not use diversity ($D$), zone air distribution effectiveness ($E_z$), and system ventilation efficiency ($E_v$) from ASHRAE Standard 62.1.

***Revise Section 8.2(a)(6) and 8.2(a)(7) as shown.***

**8.2 General Outpatient Facility Requirements.** [ . . . ]

The following requirements shall apply for space ventilation:

a. Spaces shall be ventilated according to Table 8-2.

[ . . . ]

6. For air-handling systems utilizing the cfm/person and cfm/ft$^2$ outdoor air ventilation rates serving spaces listed in Table 8-2 or spaces listed in Table 8-2 and ASHRAE Standard 62.1, system minimum outdoor air quantity shall be calculated by the Ventilation Rate Procedure of ASHRAE Standard 62.1[1]. The cfm/person rate shall be considered the $R_p$ value, and the cfm/ft$^2$ rate shall be considered the $R_a$ value in the calculation.

[ . . . ]

7. For air-handling systems serving multiple spaces and utilizing the "Minimum Outdoor ach" column, system minimum outdoor air quantity shall be calculated using one of the following methods:

i. For systems serving only spaces within the scope of this standard, system minimum outdoor air quantity for an air-handling system shall be calculated as the sum of the individual space requirements as defined by this standard.

~~ii. System minimum outdoor air quantity shall be calculated by the Ventilation Rate Procedure (multiple-zone formula) of ASHRAE Standard 62.1[1]. The minimum outdoor air change rate listed in this standard shall be interpreted as the zone outdoor airflow ($V_{oz}$) for purposes of this calculation.~~

ii. For systems serving spaces both in this standard and in ASHRAE Standard 62.1, system minimum outdoor air quantity for an air-handling system shall be calculated as the sum of

(a) the outdoor air quantity required for spaces in the scope of this standard as calculated in Section 8.2(a)(7)(i) plus

(b) the design outdoor air intake flow ($V_{ot}$) required for spaces in the scope of ASHRAE Standard 62.1 as calculated by ASHRAE Standard 62.1

***Informative Note:*** The calculation method specified in Section 8.2(a)(7)(i) does not use diversity ($D$), zone air distribution effectiveness ($E_z$), and system ventilation efficiency ($E_v$) from ASHRAE Standard 62.1.

***Revise Section 9.1(a)(6) as shown.***

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

a. Spaces shall be ventilated according to Table 9-1.

[ . . . ]

6. For air-handling systems serving multiple spaces, system minimum outdoor air quantity shall be calculated using one of the following methods:

i. For systems serving only spaces within the scope of this standard, system minimum outdoor air quantity for an air-handling system shall be calculated as the sum of the individual space requirements as defined by this standard.

~~ii. System minimum outdoor air quantity shall be calculated by the Ventilation Rate Procedure (multiple-zone formula) of ASHRAE Standard 62.1[1]. The minimum outdoor air change rate listed in this standard shall be interpreted as the zone outdoor airflow ($V_{oz}$) for purposes of this calculation.~~

ii. For systems serving spaces both in this standard and in ASHRAE Standard 62.1, system minimum outdoor air quantity for an air-handling system shall be calculated as the sum of

(a) the outdoor air quantity required for spaces in the scope of this standard as calculated in Section 9.1(a)(6)(i) plus

(b) the design outdoor air intake flow ($V_{ot}$) required for spaces in the scope of ASHRAE Standard 62.1 as calculated by ASHRAE Standard 62.1

***Informative Note:*** The calculation method specified in Section 9.1(a)(6)(i) does not use diversity ($D$), zone air distribution effectiveness ($E_z$) and system ventilation efficiency ($E_v$) from ASHRAE Standard 62.1.

# 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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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.

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