



**BSR/ASHRAE/ASHE Addendum a
to ANSI/ASHRAE/ASHE Standard 170-2021**

Advisory Public Review Draft

**Proposed Addendum a to
Standard 170-2021, Ventilation of
Health Care Facilities**

First **Advisory Public Review (**April 2021**)
(Draft shows Proposed Changes to Current Standard)**

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

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American Society for Healthcare Engineering
of the American Hospital Association

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FOREWORD

In the right climate, location and application, natural ventilation can provide and enhance the healing environment. Such is the proposition as presented in concept herein. In an inpatient hospital and outpatient setting, the considerations in applying natural ventilation are more complex than residential oriented settings.

This proposed addendum will not become part of the standard. An Advisory Public Review addendum reflects the committee's interest in exploring this subject and allows the committee to solicit productive feedback from the public. We welcome your interest and input.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Note to Reviewers: This draft is available for comment according to ASHRAE procedures for an Advisory Public Review (APR). The purpose of an APR is to seek suggestions for new, unusual, or potentially controversial elements of the proposed standard that the project committee believes would benefit from increased public scrutiny prior to finalizing the draft for its first formal public review.

To submit a comment on this proposed standard, go to the ASHRAE website at <https://www.ashrae.org/standards-research--technology/public-review-drafts> and access the online comment database. Apart from acknowledging receipt of each comment, communication with commenters by the authoring project committee is optional but may be undertaken to clarify a comment's intent or to invite further participation in the standard's development process. Any comments received as a result of this APR are deemed to be "supportive" and do not need to be resolved.

Addendum a to 170-2021

Add new Section 6.3.4 as shown below.

6.3.4 Natural Ventilation intakes.

- a. Natural ventilation air intakes shall meet ASHRAE Standard 62.1, including all outdoor air quality assessment requirements.
 - b. Natural ventilation intakes shall be designed to be periodically or permanently closed when or if outdoor air exceeds the limits established by U.S. Environmental Protection Agency National Ambient Air Quality Standards (NAAQS).
 - c. Natural ventilation intakes shall protect from intrusion by insects or vermin.
- Informative Note: For more information, see US EPA (2006). Facilities implementing natural ventilation are encouraged to monitor PM10 and/or PM2.5 via local sensors.

Revise Section 6.4b as shown below. The remainder of Section 6.4 is unchanged

6.4 Filtration. Filtration of mechanically supplied air shall be provided as follows:

- a. Particulate matter filters, minimum MERV-8, shall be provided upstream of the first heat exchanger surface of any air-conditioning system that combines return air from multiple rooms or introduces outdoor air.
- b. Outdoor air shall be filtered in accordance with Table 7-1, 8-1, 8-2, or 9-1. Natural ventilation air supplied to spaces need not be filtered, provided it is part of a system meeting Section 6.3.4.

[...]

Add new Section 6.5 as shown below. Renumber existing Sections 6.5 through 6.9 and their subsections to Sections 6.6 through 6.10.

6.5 Natural Ventilation Design for Hospital and Outpatient Spaces

6.5.1 Use of Natural Ventilation. Supply air with untreated, unconditioned natural ventilation shall be permitted for either or both of the outdoor air and total air change requirement. When natural ventilation is used, air change rates will fluctuate. Required ventilation rates shall be met as daily averages.

6.5.2 Unpermitted spaces. Natural ventilation is not allowed in the following spaces:

- a. Operating Rooms
- b. Sterile storage or sterile supply areas (including the sterile core)
- c. Procedure suites
- d. Interventional radiology or cardiology
- e. Compounding pharmacies
- f. Airborne isolation areas
- g. Protective environments, burn units, or other positively pressurized spaces holding immune-suppressed patients

6.5.3 Natural ventilation design. Natural and mixed mode ventilation designs shall be such that:

- a. pressure relationships, design temperatures, and humidity ranges specified in Table 7.1, 8-1, 8-2 are maintained; and
- b. untreated outdoor air with excess humidity, high temperature, high particulate content, or inappropriate odors is not permitted; and
- c. operable window openings are limited to 6" to discourage unsafe use, self-harm, or security intrusion, and
- d. uncontrolled contamination of clean spaces (e.g. operating rooms, protective environments) with untreated outdoor air via building pathways is not permitted.

Revise Section 7.1.a.4 as shown below. The remainder of Section 7.1 is unchanged.

[...]

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

[...]

4. For mechanically supplied air, ~~T~~the entire minimum outdoor air changes per hour required by Table 7.1 for the space shall meet the filtration requirements of Section 6.4.

[...]

Revise Section 8.1.a.4 as shown below. The remainder of Section 8.1 is unchanged.

[...]

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

[...]

4. For mechanically supplied air, ~~T~~the entire minimum outdoor air changes per hour required by Table 8-1 for the space shall meet the filtration requirements of Section 8.1.

[...]

Revise Section 8.2.a.4 as shown below. The remainder of Section 8.2 is unchanged.

[...]

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

[...]

4. For mechanically supplied air, ~~A~~all ventilation required by Table 8-2 shall meet the filtration requirements of Section 6.4 and Section 8.2.

[...]

Add to Informative Appendix E as shown below. The remainder of Informative Appendix E is unchanged.

INFORMATIVE APPENDIX E
INFORMATIVE REFERENCES AND BIBLIOGRAPHY

US EPA. 2006. "National Primary and Secondary Ambient Air Quality Standards." Code of Federal Regulations, Title 40 Part 50 (40 CFR 50).

USP. 2017a. National Formulary USP-797, Pharmaceutical Compounding—Sterile Preparations. Rockville, MD: U.S. Pharmacopeial Convention.