ADDENDA

ANSI/ASHRAE Addendum n to
ANSI/ASHRAE Standard 62.1-2022

Ventilation and Acceptable Indoor Air Quality

Approved by ASHRAE and the American National Standards Institute on September 30, 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 (www.ashrae.org/continuous-maintenance).

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 ISSN 1041-2336

Approved American National Standard
ANSI
www.ansi.org

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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 Indoor Air Quality Procedure (IAQP) requires that a mass balance calculation be performed. Any mass balance that includes filtration or air cleaning requires a particle filtration efficiency or gaseous removal efficiency. Addendum n requires that the efficiencies of these devices be tested to current standards. However, with no specific testing requirements, there is no assurance that designs will work.

The ASHRAE Position Document on Filtration and Air Cleaning[1] *states "All filtration and air-cleaning technologies should be accompanied by data documenting their performance regarding removal of contaminants; these data should be based on established industry test standards." Previous draft addenda to the standard included testing to ASHRAE standards but were viewed by some as being overly restrictive. Addendum n is more inclusive—for example, citing ISO standards. To ensure objectivity for test equipment suppliers, no specific design of the test apparatus is specified. Instead requirements of apparatus properties and validation tests are specified.*

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 n to Standard 62.1-2022

Add New Section 6.3.4 as shown below. Renumber other sections as appropriate.

6.3.4 Air Cleaning. Where particulate matter or gas-phase air cleaning is included in the design, the removal efficiencies shall be specified as follows. Particulate matter filters shall report an efficiency reporting value (MERV) in accordance with ASHRAE Standard 52.2 or reporting in accordance with ISO 16890. Gas-phase air cleaners shall report an efficiency test for all compounds included in the design in accordance with any of the following:

a. ASHRAE Standard 145.2
b. ISO 10121-2
c. Testing by methods in Section 6.1.2,10.4, and 10.5 and reported as required in ASHRAE Standard 145.2, Section 11
d. Testing to a national consensus standard approved by the authority having jurisdiction
e. For technologies not covered by any of the above, tests developed to demonstrate the removal efficiency shall be performed by a third party. The custom efficiency test shall be conducted for all compounds included in the design, and shall comply with the following:
    1. Test of the background concentration without the air cleaning in operation
    2. Test of the output concentration with the air cleaning in operation
    3. Be conducted under air cleaning operating conditions that match the IAQP design operating conditions (***Informative Note:*** Air cleaning operating conditions include fan voltage, flow rate, and other settings that are consistent with the manufacturer's operating specifications.)
    4. Be conducted using the relevant laboratory methods for analysis and quantification as specified in Table 7-1. Inorganic compounds and PM2.5 may be measured instead using direct read instruments that are calibrated in accordance with the device manufacturer's recommendations, capable of measuring below the design limit, and consistent with the performance requirements specified in Table 7-2.

Any custom efficiency test description, covering points (a) through (d) above and challenge test concentration shall be documented and approved by the authority having jurisdiction. All test results, along with relevant equipment settings, shall be provided upon request.

1. www.ashrae.org/file%20library/about/position%20documents/filtration-and-air-cleaning-pd-feb.2.2021.pdf

Table 7-1 Allowed Laboratory Test Methods

Compound	Allowed Test Methods
VOCs except formaldehyde, acetaldehyde and acetone	ISO 16000-6; EPA IP-1, EPA TO-17; ISO 16017-1; ISO 16017-2; ASTM D6345-10
Formaldehyde, acetaldehyde and acetone	ISO 16000-3; EPA TO-11; EPA IP-6; ASTM D5197
Carbon monoxide	ISO 4224; EPA IP-3

Table 7-2 Direct Reading Instruments Minimum Specifications

	Ozone	PM2.5	Carbon Monoxide
Accuracy (±)	5 ppb	Greater of 5 µg /m^3 or 20% of reading	Greater of 3 ppm or 20% of reading
Resolution (±)	1 ppb	5 µg/m^3	1 ppm

Add the following reference to Section 9. The remainder of Section 9 is unchanged.

9. REFERENCES

ASHRAE. 2016. ANSI/ASHRAE Standard 145.2, *Laboratory Test Method for Assessing the Performance of Gas-Phase Air-Cleaning Systems: Air-Cleaning Devices*. Peachtree Corners, GA: ASHRAE.

ISO. 2013. ISO 10121-2, *Test methods for assessing the performance of gas-phase air cleaning media and devices for general ventilation—Part 2: Gas-phase air cleaning devices (GPACD)*. Geneva, Switzerland: International Organization for Standardization.

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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9/22