ADDENDA

ANSI/ASHRAE Addendum h to
ANSI/ASHRAE Standard 62.1-2013

Ventilation for Acceptable Indoor Air Quality

Approved by the ASHRAE Standards Committee on January 23, 2016; by the ASHRAE Board of Directors on January 27, 2016; and by the American National Standards Institute on February 24, 2016.

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. The change submittal form, instructions, and deadlines may be obtained in electronic form from the ASHRAE website (www.ashrae.org) or in paper form from the Manager of Standards.

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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

The changes to the standard in this addendum are for the purpose of complying with ASHRAE's mandatory language policy for standards. The changes are intended to clarify the requirements and reduce ambiguity in interpretation and enforcement. Many of these changes will change requirements of the standard.

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 h to Standard 62.1-2013

The 2015 Supplement to 62.1-2013 is now published and posted for free on the ASHRAE website at www.ashrae.org/standards-research--technology/standards-addenda.

The 2015 Supplement includes Addenda a, c, j, k, q, r, and s to 62.1-2013.

Revise the following definitions is Section 3 as shown. The remainder of Section 3 is unchanged.

3. DEFINITIONS (SEE FIGURE 3.1)

industrial space: an indoor environment where the primary activity is production or manufacturing processes. ~~The processes in these spaces may generate contaminants with characteristics and in quantities dictating that principles of worker safety and industrial hygiene be used to define contaminant control strategies, including ventilation. Also, the primary occupants of these spaces consist of the individuals involved in these processes.~~

ventilation zone: any indoor area that requires ventilation and comprises one or more ~~occupiable~~ spaces with ~~similar~~ the same occupancy category (see Table 6.2.2.1), occupant density, zone air distribution effectiveness (see Section 6.2.2.2), and design zone primary airflow (see Section 6.2.5.1) per unit area.

Revise Section 4 as shown. The remainder of Section 4 is unchanged.

[. . .]

4.2 Local Air Quality. An observational survey of the building site and its immediate surroundings shall be conducted during hours the building is expected to be normally occupied to identify local contaminants from surrounding facilities that ~~may~~ will be of concern if allowed to enter the building.

4.3 Documentation. Documentation of the outdoor air quality investigation shall be reviewed with building owners or their representative and shall include the following as a minimum:

a. Regional air quality compliance status

Informative Note: Regional outdoor air quality compliance status for the United States is available from the U.S. Environmental Protection Agency located at www.epa.gov.

b. Local survey information
   1. Date of observations
   2. Time of observations
   3. Site description
   4. Description of facilities on site and on adjoining properties
   5. Observation of odors or irritants
   6. Observation of visible plumes or visible air contaminants
   7. Description of sources of vehicle exhaust on site and on adjoining properties
   8. Identification of potential contaminant sources on the site and from adjoining properties, including any that operate only seasonally

c. Conclusions regarding the acceptability of outdoor air quality and the information supporting the conclusion. ~~based on consideration of information from investigation~~

Revise Section 5 as shown. The remainder of Section 5 is unchanged.

[. . .]

5.4.1 Resistance to Mold Growth. Material surfaces shall be determined to be resistant to mold growth in accordance with a standardized test method, such as the "Mold Growth and Humidity Test" in UL 181,[3] ASTM C 1338,[4] or ~~comparable test methods~~ ASTM D3273[XX].

[. . .]

5.5.2 Rain Entrainment. Outdoor air intakes that are part of the mechanical ventilation system shall be designed to manage rain entrainment in accordance with ~~any one~~ one or more of the following:

a. Limit water penetration through the intake to 0.07 oz/ft^2·h (21.5 g/m^2·h) of inlet area when tested using the rain test apparatus described in Section 58 of UL 1995.[12]
b. Select louvers that limit water penetration to a maximum of 0.01 oz/ft^2 (3 g/m^2) of louver free area at the maximum intake velocity. This water penetration rate shall be determined for a minimum 15-minute test duration when subjected to a water flow rate of 0.25 gal/min (16 mL/s) as described under the Water Penetration Test in AMCA 500-L[13] or equivalent. Manage the water that penetrates the louver by providing a drainage area ~~and/or~~ or moisture removal devices.
c. Select louvers that restrict wind-driven rain penetration to less than 2.36 oz/ft^2·h (721 g/m^2·h) when subjected to a

simulated rainfall of 3 in. (75 mm) per hour and a 29 mph (13 m/s) wind velocity at the design outdoor air intake rate with the air velocity calculated based on the louver face area.

Informative Note: This performance corresponds to Class A (99% effectiveness) when rated according to AMCA 511[14] and tested per AMCA 500-L.[13]

d. Use rain hoods sized for no more than 500 fpm (2.5 m/s) face velocity with a downward-facing intake such that all intake air passes upward through a horizontal plane that intersects the solid surfaces of the hood before entering the system.
e. Manage the water that penetrates the intake opening by providing a drainage area ~~and/or~~or moisture removal devices.

[. . .]

5.5.4 Snow Entrainment. Where climate dictates, outdoor air intakes that are part of the mechanical ventilation system shall be designed to manage water from snow, ~~which~~ that is blown or drawn into the system, as follows:

a. ~~Suitable~~ Aaccess doors to permit cleaning of wetted surfaces shall be provided.
b. Outdoor air ductwork or plenums shall pitch to drains designed in accordance with the requirements of Section 5.10.

[. . .]

5.7 Combustion Air. Fuel-burning appliances, both vented and unvented, shall be provided with ~~sufficient~~ air for combustion and ~~adequate~~ removal of combustion products in accordance with manufacturer instructions. Products of combustion from vented appliances shall be vented directly outdoors.

[. . .]

5.9.2 Building Exfiltration. Ventilation system(s) for a building shall be designed ~~to ensure~~ such that the total building outdoor air intake equals or exceeds the total building exhaust under all load and dynamic reset conditions.

Exceptions:

1. Where ~~excess exhaust~~ an imbalance is required by process considerations and approved by the authority having jurisdiction, such as in certain industrial facilities
2. When outdoor air dry-bulb temperature is below the indoor space dew-point design temperature

Informative Note: Although individual zones within a building may be neutral or negative with respect to outdoors or to other zones, net positive mechanical intake airflow for the building as a whole reduces infiltration of untreated outdoor air.

[. . .]

5.10.2 Drain Outlet. The drain pan outlet shall be located at the lowest point(s) of the drain pan and shall be sized ~~of sufficient diameter~~ to preclude drain pan overflow under any normally expected operating condition.

[. . .]

5.10.4 Pan Size. The drain pan shall be located under the water-producing device. Drain pan width shall be sized ~~sufficient~~ to collect water droplets across the entire width of the water-producing device or assembly. For horizontal airflow configurations, the drain pan length shall begin at the leading face or edge of the water-producing device or assembly and extend downstream from the leaving face or edge to a distance of either

a. one half of the installed vertical dimension of the water-producing device or assembly or
b. as necessary to limit water droplet carryover beyond the drain pan to 0.0044 oz/ ft^2 (1.5 mL/m^2) of face area per hour under peak sensible and peak dew-point design conditions, accounting for ~~considering~~ both latent load and coil face velocity.

[. . .]

5.13.1 Equipment Clearance. Ventilation equipment shall be installed with ~~sufficient~~ working space that will allow for inspection and routine maintenance including ~~(e.g.,~~ filter replacement and fan belt adjustment and replacement~~)~~.

[. . .]

5.14.2 Condensation on Interior Surfaces. Pipes, ducts, and other surfaces within the building whose surface temperatures are expected to fall below the surrounding dew-point temperature shall be insulated. The insulation system thermal resistance and material characteristics shall ~~be sufficient to~~ prevent condensate ~~ion~~ from forming on the exposed surface and within the insulating material.

Exceptions:

1. Where condensate will wet only surfaces that ~~can~~ will be managed to prevent or control mold growth
2. Where local practice has demonstrated that condensation does not result in mold growth

[. . .]

5.16.1 Classification. Air (return, transfer, or exhaust air) leaving each space or location shall be designated at an expected air-quality classification not less than that shown in Tables 5.16.1, 6.2.2.1, or 6.5, or as approved by the authority having jurisdiction. Air leaving spaces or locations that are not listed in Table 5.16.1, 6.2.2.1, or 6.5 shall be designated with the same classification as air from the most similar space or location listed in terms of occupant activities and building construction.

Exception: Air from spaces where ETS is present (Classification of air from spaces where ETS is present is not

addressed. Spaces that are expected to include ETS do not have a classification listed in Table 6.2.2.1.)

Informative Note: Classifications in Tables 5.16.1, 6.2.2.1, and 6.5 are based on relative contaminant concentration using the following subjective criteria:

- Class 1: Air with low contaminant concentration, low sensory-irritation intensity, and inoffensive odor
- Class 2: Air with moderate contaminant concentration, mild sensory-irritation intensity, or mildly offensive odors (Class 2 air also includes air that is not necessarily harmful or objectionable but that is inappropriate for transfer or recirculation to spaces used for different purposes.)
- Class 3: Air with significant contaminant concentration, significant sensory-irritation intensity, or offensive odor
- Class 4: Air with highly objectionable fumes or gases or with potentially dangerous particles, bioaerosols, or gases, at concentrations high enough to be considered as harmful

[. . .]

5.16.2.1 Air Cleaning. If air leaving a space or location passes through an air-cleaning system, redesignation of the cleaned air to a cleaner classification shall be permitted, ~~using the~~ where based on the subjective criteria ~~noted above~~ in the Informative Note for Section 5.16.1, ~~with the approval of~~ and where approved by the authority having jurisdiction.

[. . .]

5.16.2.3 Ancillary Spaces. Redesignation of Class 1 air to Class 2 air shall be permitted for Class 1 "spaces that are ancillary to Class 2 spaces."

Informative Note: For example, an office within a restaurant ~~may~~ might be designated as a space ancillary to a Class 2 space, thus enabling the office to receive Class 2 air.

[. . .]

5.17.7 Signage. A sign shall be posted outside each entrance to each ETS area. The sign shall state, as a minimum, "This Area May Contain Environmental Tobacco Smoke" in letters at least 1 in. (25 mm) high or otherwise in compliance with accessibility guidelines.

Informative Note: Based on the definition of *ETS area*, such a sign ~~may~~ might be posted outside a larger ETS area that includes the area where smoking is permitted.

[. . .]

5.17.8 Reclassification. An area that was previously an ETS area, but now meets the requirements of an ETS-free area, ~~may~~ shall be permitted to be classified as such ~~after intentional or allowed~~ where smoke exposure has stopped and odor and irritation from residual ETS contaminants are not apparent.

Revise Section 6 as shown. The remainder of Section 6 is unchanged.

6.1 General. The Ventilation Rate Procedure, the IAQ Procedure, ~~and/or~~ the Natural Ventilation Procedure, or a combination thereof shall be used to meet the requirements of this section. In addition, the requirements for exhaust ventilation in Section 6.5 shall be met regardless of the method used to determine minimum outdoor airflow rates.

[. . .]

6.1.3 Natural Ventilation Procedure. The prescriptive design procedure presented in Section 6.4, in which outdoor air is provided through openings to the outdoors, shall be permitted to be used for any zone or portion of a zone in conjunction with mechanical ventilation systems ~~as required~~ in accordance with Section 6.4.

[. . .]

6.2.1 Outdoor Air Treatment. ~~If outdoor air is judged to be in accordance with Section 4.1, each~~ Each ventilation system that provides outdoor air through a supply fan shall comply with the following subsections.

Exception: Systems supplying air for enclosed parking garages, warehouses, storage rooms, janitor's closets, trash rooms, recycling areas, shipping/receiving/distribution areas

Informative Note: Occupied spaces ventilated with outdoor air that is judged to be unacceptable are subject to reduced air quality when outdoor air is not cleaned prior to introduction to the occupied spaces.

[. . .]

6.2.1.1 Particulate Matter Smaller than 10 Micrometers (PM10). ~~When the b~~ In buildings ~~is~~ located in an area where the national standard or guideline for PM10[1] is exceeded, particle filters or air-cleaning devices shall be provided to clean the outdoor air at any location prior to its introduction to occupied spaces. Particulate matter filters or air cleaners shall have a ~~minimum~~ efficiency reporting value (MERV) of not less than 6 ~~or higher when~~ where rated in accordance with ASHRAE ~~Standard~~ 52.2.[15]

Informative Note: See Informative Appendix E for resources regarding selected PM10 national standards and guidelines.

6.2.1.2 Particulate Matter Smaller than 2.5 Micrometers (PM2.5). ~~When the b~~ In buildings ~~is~~ located in an area where the national standard or guideline for PM2.5[1] is exceeded, particle filters or air cleaning devices shall be provided to clean the outdoor air at any location prior to its introduction to occupied spaces. Particulate matter filters or air cleaners shall have a ~~minimum~~ efficiency reporting value (MERV) of not less than 11 ~~or higher when~~ where rated in accordance with ASHRAE ~~Standard~~ 52.2.[15]

Informative Note: See Informative Appendix E for resources regarding selected PM2.5 national standards and guidelines.

[. . .]

6.2.1.3 Ozone.

[. . .]

Such air-cleaning devices shall have a ~~minimum~~ volumetric ozone removal efficiency of not less than 40% ~~when~~ where installed, operated, and maintained in accordance with manufacturer recommendations and shall be approved by the authority having jurisdiction. Such devices shall be operated ~~whenever~~ where the outdoor ozone levels are expected to exceed 0.107 ppm (209 μg/m^3).

Exceptions: Air cleaning for ozone ~~is~~ shall not be required ~~when~~ where

1. the ~~minimum~~ system design outdoor air intake flow ~~results in~~ is 1.5 ach or less,
2. controls are provided that sense outdoor ozone level and reduce intake airflow to ~~result in~~ 1.5 ach or less while complying with the outdoor airflow requirements of Section 6, or
3. outdoor air is brought into the building and heated by direct-fired~~,~~ makeup air units.

[. . .]

ITEM-SPECIFIC NOTES FOR TABLE 6.2.2.1

[. . .]

C Rate does not allow for humidity control. ~~Additional ventilation or dehumidification may be required to remove moisture.~~ "Deck area" refers to the area surrounding the pool that ~~would be expected to be~~ is capable of being wetted during ~~normal~~ pool use~~, i.e.,~~ or when the pool is occupied. Deck area that is not expected to be wetted shall be designated as an occupancy category ~~space type (for example, "spectator area")~~.

[. . .]

6.2.2.3 Zone Outdoor Airflow. The zone outdoor airflow (V_{oz}), ~~i.e., the outdoor airflow rate that must be~~ provided to the ventilation zone by the supply air distribution system~~,~~ shall be determined in accordance with Equation 6.2.2.3.

$$V_{oz} = V_{bz}/E_z \qquad (6.2.2.3)$$

[. . .]

6.2.5.1 Primary Outdoor Air Fraction. Primary outdoor air fraction (Z_{pz}) shall be determined for ventilation zones in accordance with Equation 6.2.5.1.

$$Z_{pz} = V_{oz}/V_{pz} \qquad (6.2.5.1)$$

where V_{pz} is the zone primary airflow~~, i.e., the primary airflow rate~~ to the ventilation zone ~~from the air handler~~, including outdoor air and recirculated air.

~~***Notes:***~~

~~1.~~a. For VAV-system design purposes, V_{pz} is the lowest zone primary airflow value expected at the design condition analyzed.

~~2.~~b. In some cases, it is ~~acceptable~~ permitted to determine these parameters for only selected zones as outlined in Normative Appendix A.

[. . .]

TABLE 6.2.5.2 System Ventilation Efficiency

Max (Z_{PZ})	E_v
≤0.15	1.0
≤0.25	0.9
≤0.35	0.8
≤0.45	0.7
≤0.55	0.6
>0.55	Use Appendix A

1. "Max (Z_{pz})" refers to the largest value of Z_{pz}, calculated using Equation 6.2.5.1, among all the ventilation zones served by the system.
2. For values of Max (Z_{pz}) between 0.15 and 0.55, the corresponding value of E_v may be determined by interpolating the values in the table.
3. The values of E_v in this table are based on a 0.15 average outdoor air fraction for the system ~~(i.e., the ratio of the uncorrected outdoor air intake [V_{ou}] to the total zone primary airflow for all the zones served by the air handler)~~. For systems with higher values of the average outdoor air fraction, this table may result in unrealistically low values of E_v and the use of Normative Appendix A may yield-more practical results.

[. . .]

6.2.5.3.2 Design System Population. Design system population (P_s) shall equal the largest (peak) number of people expected to occupy all ventilation zones served by the ventilation system during ~~typical usage~~ use.

Informative Note: Design system population is always equal to or less than the sum of design zone population for all zones in the area served by the system, since all zones ~~may or~~ may not be simultaneously occupied at design population.

[. . .]

6.2.6.1 Variable Load Conditions. Ventilation systems shall be designed to be capable of providing not less than the minimum ventilation rates required in the breathing zone ~~whenever~~ where the zones served by the system are occupied, including all full- and part-load conditions.

[. . .]

6.3.1 Contaminant Sources. Each contaminant of concern, for purposes of the design, shall be identified. For each contaminant of concern, indoor sources ~~(e.g., occupants and~~

~~materials)~~ and outdoor sources shall be identified, and the emission rate for each contaminant of concern from each source shall be determined. Where two or more contaminants of concern target the same organ system, these contaminants shall be considered to be a contaminant mixture.

Informative Note: Informative Appendix B provides information for some potential contaminants of concern, including the organs they affect.

[. . .]

6.3.4 Design Approach. Zone and system outdoor airflow rates shall be the larger of those determined in accordance with Section 6.3.4.1 and either Section 6.3.4.2 or 6.3.4.3, based on emission rates, concentration limits, and other relevant design parameters ~~(e.g., air cleaning efficiencies and supply airflow rates)~~.

[. . .]

6.3.4.3 Similar Zone. The minimum outdoor airflow rates shall be not less than those found in accordance with Section 6.3.4.2 for a substantially similar zone ~~(i.e., in a zone with identical contaminants and contaminant mixtures of concern, concentration limits, air cleaning efficiency, and specified level of acceptability; and with similar contaminant sources and emission rates)~~.

6.3.5 Combined IAQ Procedure and Ventilation Rate Procedure. The IAQ procedure in conjunction with the Ventilation Rate Procedure ~~may~~ shall be permitted to be applied to a zone or system. In this case, the Ventilation Rate Procedure shall be used to determine the required zone minimum outdoor airflow, and the IAQ Procedure shall be used to determine the additional outdoor air or air cleaning necessary to achieve the concentration limits of the contaminants and contaminant mixtures of concern.

Informative Note: The improvement of indoor air quality through the use of air cleaning or provision of additional outdoor air in conjunction with minimum ventilation rates may be quantified using the IAQ procedure.

[. . .]

6.4.1.3 Corner Openings. For spaces with operable openings on two adjacent sides of a space ~~(i.e. two sides of a corner),~~ the maximum distance from the operable openings ~~is~~ shall be not more than 5*H* along a line drawn between the two openings that are farthest apart. Floor area outside that line ~~must~~ shall comply with Section 6.4.1.1.

[. . .]

6.4.3 Control and Accessibility. The means to open required operable openings shall be readily accessible to building occupants whenever the space is occupied. Controls shall be designed to ~~properly~~ coordinate operation of the natural and mechanical ventilation systems.

[. . .]

TABLE 6.5 Minimum Exhaust Rates

[. . .]

NOTES:

[. . .]

D Rate is per water closet, ~~and/or~~ urinal, or both. Provide the higher rate where periods of heavy use are expected to occur~~, e.g., toilets in theaters, schools, and sports facilities~~. The lower rate ~~may~~ shall be permitted to be used otherwise.

E Rate is for a toilet room intended to be occupied by one person at a time. For continuous system operation during ~~normal~~ hours of use, the lower rate ~~may be~~ shall be permitted to be used. Otherwise ~~use~~ the higher rate shall be used.

[. . .]

6.6 Design Documentation Procedures. Design criteria and assumptions shall be documented and ~~should be~~ made available for operation of the system ~~within a reasonable time~~ after installation. See Sections 4.3, 5.1.3, 5.16.4, 6.2.7.1.4, and 6.3.6 regarding assumptions ~~that should~~ to be detailed in the documentation.

Revise Section 7.2.3 as shown.

7.2.3 Testing of Drain Pans. To minimize conditions of water stagnation that may result in microbial growth, drain pans shall be field tested under ~~normal~~ operating conditions that are the most restrictive to condensate flow to ~~ensure~~ demonstrate proper drainage.

Informative Note: Above conditions usually occur at full fan airflow for draw through fans and minimum fan airflow for blow through fans.

Exception: Field testing of drain pans is not required if units with factory-installed drain pans have been certified (attested in writing) by the manufacturer for proper drainage when installed as recommended.

Revise Section 8 as shown. The remainder of Section 8 is unchanged.

[. . .]

8.4.1.3 Humidifiers. Humidifiers shall be cleaned and maintained to limit fouling and microbial growth. Any automatic chemical-dosing equipment shall be calibrated and maintained in accordance with the O&M manual to maintain additive concentrations to comply with Section 5.12.1. These systems shall be inspected at a minimum of once every three months of operation, ~~and~~/or ~~treated~~ in accordance with the O&M manual.

8.4.1.4 Dehumidification Coils. All dehumidifying cooling coils shall be visually inspected for cleanliness and microbial growth regularly when ~~it is likely that~~ dehumidification occurs, but no less than once per year or as specified in the O&M manual, and shall be cleaned when fouling or microbial growth is observed.

TABLE 8.4.1 Minimum Maintenance Activity and Frequency

Item	Activity Code	Minimum Frequency[a]
Filters and air-cleaning devices	A	According to O & M manual
Outdoor air dampers and actuators	B	In accordance with the O & M manual or every three months
Humidifiers	C	In accordance with the O & M manual or every three months of use
Dehumidification coils	D	As specified in the O & M manual or ~~regularly~~ when ~~it is likely that~~ dehumidification occurs, but not less than once per year
Drain pans and other adjacent surfaces subject to wetting	D	As specified in the O & M manual or once per year during cooling season
Outdoor air intake louvers, bird screens, mist eliminators, and adjacent areas	E	As specified in the O & M manual or every six months
Sensors used for dynamic minimum outdoor air control	F	~~Periodically i~~In accordance with the O & M manual or every six months
Air-handling systems except for units under 2000 cfm (1000 L/s)	G	Once every five years
Cooling towers	H	In accordance with O & M manual or treatment system provider
Floor drains located in plenums or rooms that serve as air plenums	I	~~Periodically~~ In accordance with the ~~according to~~ O & M manual
Equipment/component accessibility	J	
Visible microbial contamination	K	
Water intrusion or accumulation	K	

ACTIVITY CODE:
A Maintain according to O&M manual.
B Visually inspect or remotely monitor for proper function.
C Clean and maintain to limit fouling and microbial growth.
D Visually inspect for cleanliness and microbial growth and clean when fouling is observed.
E Visually inspect for cleanliness and integrity and clean when necessary.
F Verify accuracy and recalibrate or replace as necessary.
G Measure minimum quantity of outdoor air. If measured ~~minimum~~ airflow rates are less than 90% of the minimum outdoor air rate in the O&M manual, ~~they~~ rates shall be increased ~~adjusted or modified to bring them~~ above 90% of the minimum quantity, or shall be evaluated to determine if the measured rates are in conformance with this standard.
H Treat to limit the growth of microbiological contaminants.
I Maintain to prevent transport of contaminants from the floor drain to the plenum.
J Keep clear the space provided for routine maintenance and inspection around ventilation equipment.
K Investigate and rectify.

[a] Minimum frequencies ~~may~~ shall be permitted to be increased or decreased if indicated in the O&M manual.

[. . .]

8.4.1.8 Outdoor Airflow Verification. The total quantity of outdoor air to air handlers, except for units under 2000 cfm (1000 L/s) of supply air, shall be measured in minimum outdoor air mode once every five years. If measured minimum airflow rates are less than the design minimum rate (±10% balancing tolerance) documented in the O&M manual, ~~they~~ rates shall be increased ~~adjusted or modified to bring them to~~ above the minimum design rate or evaluated to determine if the measured rates are in compliance with this standard.

[. . .]

Add a new reference to Section 9 as shown. The remainder of Section 9 is unchanged.

9. REFERENCES

XX *ASTM D3273-12, Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*. American Society for Testing and Materials, West Conshohocken, PA.

Revise Normative Appendix A as shown. The remainder of Normative Appendix A is unchanged.

NORMATIVE APPENDIX A
MULTIPLE-ZONE SYSTEMS

[. . .]

~~A2. ALTERNATIVE CALCULATIONS~~

~~Mass or flow balance equations for multiple-zone systems may be used to determine system ventilation efficiency and other design parameters, provided that they result in outdoor air intake airflow (V_{ot}) that is within 5% of the airflow value obtained using the system ventilation efficiency (E_v) calculated using Equation A1.3, or they more accurately represent a particular system configuration.~~

[. . .]

A4. SYMBOLS

E_v ~~may~~ shall be determined in accordance with Section 6.2.5.2 or Section A1.

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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