ANSI/ASHRAE Addenda l, m, n, o, and s to
ANSI/ASHRAE Standard 62.1-2007

ASHRAE STANDARD

Ventilation for Acceptable Indoor Air Quality

This addendum was approved by the ASHRAE Standards Committee on June 20, 2009; by the ASHRAE Board of Directors on June 24, 2009; and by the American National Standards Institute on June 25, 2009.

This standard is under continuous maintenance 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 Web site, http://www.ashrae.org, or in paper form from the Manager of Standards. The latest edition of an ASHRAE Standard may be purchased from ASHRAE Customer Service, 1791 Tullie Circle, NE, Atlanta, GA 30329-2305. E-mail: orders@ashrae.org. Fax: 404-321-5478. Telephone: 404-636-8400 (worldwide), or toll free 1-800-527-4723 (for orders in US and Canada).

ISSN 1041-2336

Approved American National Standard
ANSI
www.ansi.org

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
1791 Tullie Circle NE, Atlanta, GA 30329
www.ashrae.org

ASHRAE Standing Standard Project Committee 62.1
Cognizant TC: TC 4.3, Ventilation Requirements and Infiltration
SPLS Liaison: Donald L. Brandt

Addenda l, m, n, and o

Dennis A. Stanke, *Chair**
Roger L. Hedrick, *Vice-Chair**
Leon E. Alevantis*
Michael G. Apte*
Hoy R. Bohanon, Jr.
Gregory Brunner
Mark P. Buttner
Waller S. Clements*
Leonard A. Damiano*
Francis J. Fisher, Jr.*
Vincent T. Galatro
Francis Michael Gallo
Diane I. Green
Donald C. Herrmann*
Eli P. Howard, III*
Roger L. Howard*
Wayne M. Lawton
Don MacMillan
John K. McFarland*
Adam S. Muliawan
Christopher O. Muller
Lisa J. Rogers*
Duane P. Rothstein
Chandra Sekhar*
Harris M. Sheinman*
Jeffrey K. Smith
Christine Q. Sun
Wayne R. Thomann*
Dilip Y. Vyavaharkar*
Michael W. Woodford*

Addendum s

Dennis A. Stanke, *Chair**
Roger L. Hedrick, *Vice-Chair**
Leon E. Alevantis*
Michael G. Apte*
Hoy R. Bohanon, Jr.
Gregory Brunner
Mark P. Buttner
Waller S. Clements*
Leonard A. Damiano*
Francis J. Fisher, Jr.*
Vincent T. Galatro
Francis Michael Gallo
Diane I. Green
Donald C. Herrmann*
Eli P. Howard, III*
Roger L. Howard*
Wayne M. Lawton
Don MacMillan
James Patrick McClendon
John K. McFarland*
Darren B. Meyers
Adam S. Muliawan
Christopher O. Muller
Lisa J. Rogers*
Duane P. Rothstein
Chandra Sekhar*
Harris M. Sheinman*
Jeffrey K. Smith
Christine Q. Sun
Wayne R. Thomann*
Dilip Y. Vyavaharkar
Michael W. Woodford*

**Denotes members of voting status when the document was approved for publication*

SPECIAL NOTE

This American National Standard (ANS) is a national voluntary consensus standard developed under the auspices of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). *Consensus* is defined by the American National Standards Institute (ANSI), of which ASHRAE is a member and which has approved this standard as an ANS, as "substantial agreement reached by directly and materially affected interest categories. This signifies the concurrence of more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that an effort be made toward their resolution." Compliance with this standard is voluntary until and unless a legal jurisdiction makes compliance mandatory through legislation.

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 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

This addendum modifies Informative Appendix D as follows:

- *Improve variable-name consistency with body of the standard and Appendix A.*
- *Delete one figure, replace with two improved figures.*
- *Delete "proportional" systems from Table D-1, since VAV systems with fixed-position outdoor air dampers are unlikely to meet the requirements of the standard and should be discouraged.*

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 l to 62.1-2007

Revise Informative Appendix D as shown. Note that the text shown below is relative to the current Standard 62.1-2007 with the 2008 Supplement incorporated. Addendum b to 62.1-2007 (included in the 2008 Supplement) made changes to the published standard. The 2008 Supplement is available for free download from the ASHRAE website at http://www.ashrae.org/technology/page/132.

(This appendix 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.)

INFORMATIVE APPENDIX D
ACCEPTABLE MASS BALANCE EQUATIONS FOR USE WITH INDOOR AIR QUALITY PROCEDURE

When applying the Indoor Air Quality Procedure from Section 6.3, mass balance analysis may be employed to determine outdoor air ventilation requirements to control indoor contaminant levels. Table D-1 presents mass balance equations for analysis of single-zone systems.

Figures D-1 and D-2 show ~~D-1 shows a~~representative single-zone systems. A filter may be located in the recirculated airstream (location A) or in the supply (mixed) airstream (location B).

Variable-air-volume (VAV) single-zone systems reduce the circulation rate when the thermal load is lower than the design load. This is accounted for by a design flow reduction fraction F_r.

A mass balance equation for the contaminant-of-concern may be written and used to determine the required outdoor airflow or the breathing zone contaminant concentration for the various system arrangements. Six ~~Eight~~ permutations for air-handling and single-zone air distribution systems are described in Table D-l. The mass balance equations for computing the required outdoor airflow and the breathing-zone contaminant concentration at steady-state conditions for each single-zone system are presented in Table D-l.

If the allowable breathing zone contaminant concentration is specified, the equations in Table D-l may be solved for the zone outdoor airflow rate V_{oz}. When the zone outdoor airflow rate is specified, the equations may be solved for the resulting breathing zone contaminant concentration.

While the calculation methods in this appendix are based on single-zone systems and steady-state analysis, calculation methods that account for multiple-zone and transient effects are also available.[D-1]

REFERENCES

D-1 Dols, W.S., and G.N. Walton. 2002. CONTAMW 2.0 User Manual. National Institute of Standards and Technology, NISTIR 6921.

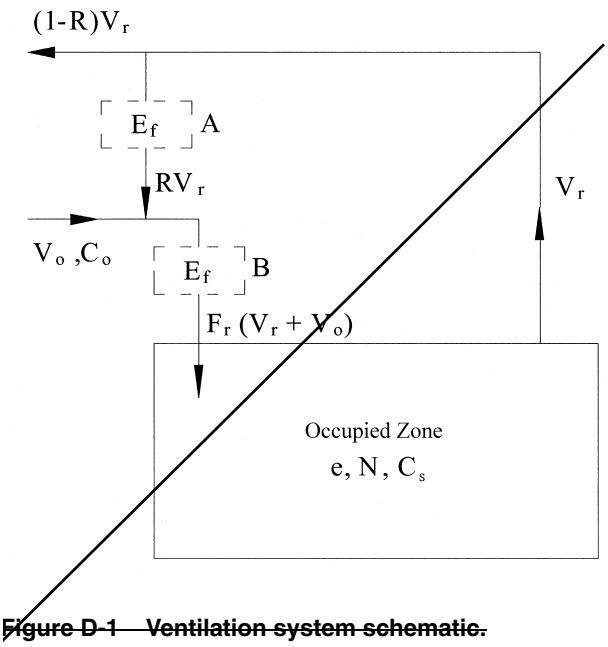
TABLE D-1 Required Zone Outdoor Airflow or Breathing Zone ~~Zone~~ Contaminant Concentration with Recirculation and Filtration for Single-Zone Systems

Required Recirculation Rate			Required Zone Outdoor Airflow (V_{oz} in Section 6)	Breathing Zone Contaminant Concentration
Filter Location	Flow	Outdoor Airflow		
None	VAV	100%	$V_{oz} = \frac{N}{E_z F_r (C_{bz} - C_o)}$	$C_{bz} = C_o + \frac{N}{E_z F_r V_{oz}}$
A	Constant	Constant	$V_{oz} = \frac{N - E_z R V_r E_f C_{bz}}{E_z (C_{bz} - C_o)}$	$C_{bz} = \frac{N + E_z V_{oz} C_o}{E_z (V_{oz} + R V_r E_f)}$
A	VAV	Constant	$V_{oz} = \frac{N - E_z F_r R V_r E_f C_{bz}}{E_z (C_{bz} - C_o)}$	$C_{bz} = \frac{N + E_z V_{oz} C_o}{E_z (V_{oz} + F_r R V_r E_f)}$
~~A~~	~~VAV~~	~~Proportional*~~	~~$V_{oz} = \frac{N - E_z F_r R V_r E_f C_{bz}}{E_z F_r (C_{bz} - C_o)}$~~	~~$C_{bz} = \frac{N + E_z F_r V_{oz} C_o}{F_r E_z (V_{oz} + R V_r E_f)}$~~
B	Constant	Constant	$V_{oz} = \frac{N - E_z R V_r E_f C_{bz}}{E_z [C_{bz} - (1 - E_f)(C_o)]}$	$C_{bz} = \frac{N + E_z V_{oz} (1 - E_f) C_o}{E_z (V_{oz} + R V_r E_f)}$
B	VAV	100%	$V_{oz} = \frac{N}{E_z F_r [C_{bz} - (1 - E_f)(C_o)]}$	$C_{bz} = \frac{N + E_z F_r V_{oz} (1 - E_f) C_o}{E_z F_r V_{oz}}$
B	VAV	Constant	$V_{oz} = \frac{N - E_z F_r R V_r E_f C_{bz}}{E_z [C_{bz} - (1 - E_f)(C_o)]}$	$C_{bz} = \frac{N + E_z V_{oz} (1 - E_f) C_o}{E_z (V_{oz} + F_r R V_r E_f)}$
~~B~~	~~VAV~~	~~Proportional~~	~~$V_{oz} = \frac{N - E_z F_r R V_r E_f C_{bz}}{E_z F_r [C_{bz} - (1 - E_f)(C_o)]}$~~	~~$C_{bz} = \frac{N + E_z F_r V_{oz} (1 - E_f) C_o}{E_z F_r (V_{oz} + R V_r E_f)}$~~

~~* Proportional indicates that the outdoor airflow varies with the supply airflow, such that the outdoor airflow is equal to the design value times the flow reduction fraction, F_r.~~

Symbol or Subscript	Definition
A, B	filter location
V	volumetric flow
C	contaminant concentration
E_z	zone air distribution effectiveness
E_f	filter efficiency
F_r	design flow reduction fraction
N	contaminant generation rate
R	recirculation flow factor
Subscript: o	outdoor
Subscript: r	return
Subscript: b	breathing
Subscript: z	zone

Delete the existing Figure D-1 and insert new Figures D-1 and D-2 as shown.



~~**Figure D-1 Ventilation system schematic.**~~

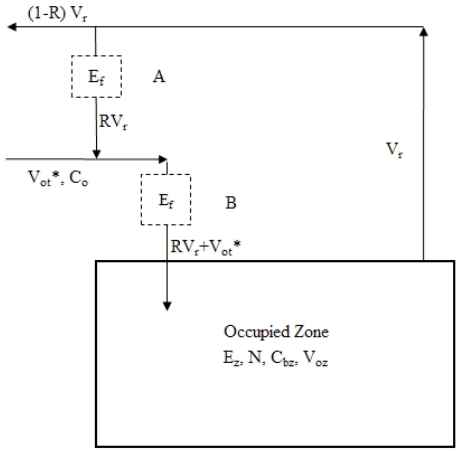


Figure D.1 Ventilation system schematic - constant volume sytem with no infiltration/exfiltration. (*V_{ot} = V_{oz} for single zone systems.)

Figure D-1 Ventilation system schematic—constant volume system with no infiltration/exfiltration. (*V_{ot} = V_{oz} for single-zone systems.

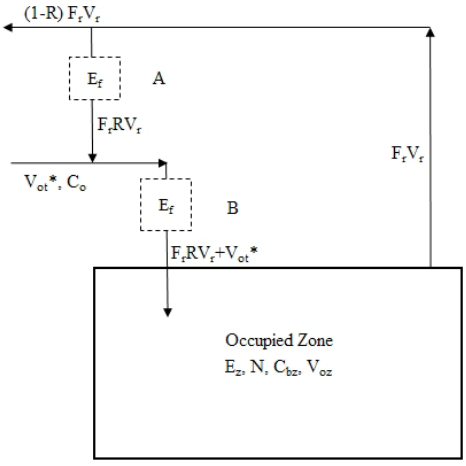


Figure D.2 Ventilation system schematic - variable air volume sytem with no infiltration/exfiltration. (*V_{ot} = V_{oz} for single zone systems.)

Figure D-2 Ventilation system schematic—variable air volume system with no infiltration/exfiltration. (*V_{ot} = V_{oz} for single-zone systems.)

(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

This addendum removes ventilation requirements for healthcare spaces from the Standard since ventilation requirements for these types of spaces are covered in Standard 170-2008, "Ventilation of Health Care Facilities."

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 m to 62.1-2007

Delete the following General Note for Table 6-1:

~~7 Health care facilities: Rates shall be determined in accordance with Appendix E.~~

Delete Appendix E in its entirety.

~~**(This is a normative appendix and is part of the standard.)**~~

~~**NORMATIVE APPENDIX E**~~
~~**VENTILATION RATES FOR**~~
~~**HEALTH CARE FACILITIES**~~

~~**TABLE E-1 Outdoor Air Requirements for Ventilation of Healthcare Facilities (Hospitals, Nursing, and Convalescent Homes)***~~

~~Application~~	~~Estimated Maximum** Occupancy, P/1000 ft^2 (P/100 m^2)~~	~~cfm/P~~	~~Outdoor Air Requirements, L/s·P cfm/ft^2~~	~~L/s m^2~~	~~Comments~~
~~Patient rooms~~	~~10~~	~~25~~	~~13~~		~~Special requirements or codes and pressure relationships may determine minimum ventilation rates and filter efficiency. Procedures generating contaminants may require higher rates.~~
~~Medical procedure~~	~~20~~	~~15~~	~~8~~		
~~Operating rooms~~	~~20~~	~~30~~	~~15~~		
~~Recovery and ICU~~	~~20~~	~~15~~	~~8~~		
~~Autopsy rooms~~	~~20~~		~~0.50~~	~~2.50~~	~~Air shall not be recirculated into other spaces.~~
~~Physical therapy~~	~~20~~	~~15~~	~~8~~		

~~* Table E-1 prescribes supply rates of acceptable outdoor air required for acceptable indoor air quality. These values have been chosen to dilute human bioeffluents and other contaminants with an adequate margin of safety and to account for health variations among people and varied activity levels.~~
~~** Net occupiable space.~~

(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

This addendum modifies Section 5.1 and 6.0 to relocate Natural Ventilation requirements into Section 6, to add prescriptive requirements for naturally ventilated systems, and to require both passive and mechanical ventilation (often called mixed-mode ventilation, but referred to as hybrid ventilation in this addendum) for most buildings in most climates.

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 62.1-2007

Revise Sections 6.1, 6.1.1 and add new Section 6.1.3 as follows:

6. VENTILATION

Delete this paragraph in its entirety, including any modifications in concurrent public review addenda.

~~This section is not required for natural ventilation systems; natural ventilation systems shall be designed in accordance with Section 5.1.~~

6.1 General. ~~Either t~~The Ventilation Rate Procedure, ~~or~~ the IAQ Procedure, and/or the Natural Ventilation Procedure shall be used to ~~design each ventilation system in a building~~ meet the requirements of this section~~, subject to the following considerations and restrictions~~.

Note: Although the intake airflow determined using each of these approaches may differ significantly because of assumptions about the design, any of these approaches is a valid basis for design.

6.1.1 Ventilation Rate Procedure. ~~This is a~~ The prescriptive design procedure presented in Section 6.2, in which outdoor air intake rates are determined based on space type/application, occupancy level, and floor area, shall be permitted to be used for any zone or system.

Note: The Ventilation Rate Procedure minimum rates are based on contaminant sources and source strengths that are typical for the listed ~~space types~~ occupancy categories.

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 Section 6.4.

Delete existing Section 5.1 and insert as new Section 6.4. Renumber remainder of Section 5 and Section 6 accordingly. Revise new Section 6.4 as follows.

Note that Addendum a to 62.1-2007 (included in the 2008 Supplement) made changes to Section 5.1 and the exception in the published standard. The 2008 Supplement is available for free download from the ASHRAE website at http://www.ashrae.org/technology/page/132:

6.4~~5.1~~ Natural Ventilation Procedure. Natural ventilation systems shall be designed in accordance with this section~~are not subject to the requirements in Section 6. Use of natural ventilation systems shall be permitted in lieu of or in conjunction with~~ and shall include mechanical ventilation systems~~. Such natural ventilation systems shall be~~ designed in accordance with ~~the requirements of~~ Section 6.2~~5.1.1~~ and/or Section 6.3~~5.1.2~~.

Exceptions:

1. An engineered natural ventilation system when approved by the authority having jurisdiction need not meet the requirements of ~~these~~ Ssections~~s~~ 6.4.
2. The mechanical ventilation systems are not required when:
   a. Natural ventilation openings that comply with the requirements of Section 6.4 are permanently open or have controls which prevent the openings from being closed during periods of expected occupancy, or
   b. The zone is not served by heating or cooling equipment.

6.4.1 Floor Area To Be Ventilated. Spaces, or portions of spaces, to be naturally ventilated must be located within a distance based on the ceiling height, as determined by Sections 6.4.1.1, 6.4.1.2, or 6.4.1.3, from operable wall openings which meet the requirements of Section 6.4.2. For spaces with ceilings which are not parallel to the floor, the ceiling height shall be determined in accordance with Section 6.4.1.5.

6.4.1.1 Single Side Opening. For spaces with operable openings on one side of the space, the maximum distance from the operable openings is 2H, where H is the ceiling height.

6.4.1.2 Double Side Opening. For spaces with operable openings on two opposite sides of the space, the maximum distance from the operable openings is 5H, where H is the ceiling height.

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 5H along a line drawn between the two openings which are farthest apart. Floor area outside that line must comply with sections 6.4.1.1.

6.4.1.4 Ceiling Height. The ceiling height, H, to be used in Sections 6.4.1.1 through 6.4.1.3 shall be the minimum ceiling height in the space.

Exception: For ceilings which are increasing in height as distance from the openings is increased, the ceiling

height shall be determined as the average height of the ceiling within 6 m (20 ft.) from the operable openings.

6.4.2 ~~5.1.1~~ Location and Size of Openings. ~~Naturally ventilated s~~Spaces, or portions of spaces, to be naturally ventilated shall be permanently open to ~~and within 8 m (25 ft) of~~ operable wall ~~or roof~~ openings directly to the outdoors, the openable area of which is a minimum of 4% of the net occupiable floor area. Where openings are covered with louvers or otherwise obstructed, openable area shall be based on the net free unobstructed area through the opening. Where interior rooms, or portions of rooms, without direct openings to the outdoors are ventilated through adjoining rooms, the opening between rooms shall be permanently unobstructed and have a free area of not less than 8% of the area of the interior room nor less than 25 ft^2 (2.3 m^2).

6.4.3 ~~5.1.2~~ 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.

Revise Section 8.3 as follows:

Note that the second sentence in Section 8.3 below was added by Addendum j to 62.1-2007.

8.3 Ventilation System Operation. Mechanical and natural ventilation systems shall be operated in a manner consistent with the O&M Manual. Systems shall be operated such that spaces are ventilated in accordance with Section 6 when they are expected to be occupied.

(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

This addendum moves the existing Section 6.2.8 "Exhaust Ventilation" and the corresponding Table 6-4 "Minimum Exhaust Rates" to a new Section 6.5 such that exhaust requirements apply to all zones and/or systems regardless of the method used to determine minimum outdoor airflow rates (Ventilation Rate Procedure, IAQ Procedure, or Natural Ventilation Procedure).

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 o to 62.1-2007

Revise Section 6 as follows:

6. PROCEDURES

~~This section is not required for natural ventilation systems; n~~Natural ventilation systems shall be designed in accordance with Section 5.1. Spaces designed with natural ventilation systems shall comply with Section 6.4.

Relocate Section 6.2.8 to new Section 6.4 as follows:

6.4~~6.2.8~~ Exhaust Ventilation. The design e~~E~~xhaust airflow shall be determined~~provided~~ in accordance with the requirements in Table 6-4. Exhaust makeup air may be any combination of outdoor air, recirculated air, and transfer air.

Renumber existing Section 6.4 as follows:

6.5~~6.4~~ 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, 5.2.3, 5.17.4, and 6.3.2 regarding assumptions that should be detailed in the documentation.

Revise Section 8.3 as follows:

(Note that the second sentence in Section 8.3 below was added by Addendum j to 62.1-2007 and has yet to be published.)

8.3 Ventilation System Operation. Mechanical and natural ventilation systems shall be operated in a manner consistent with the O&M Manual. Systems shall be operated such that spaces are ventilated in accordance with Section 6 when they are expected to be occupied.

(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

Based on committee-member experience, "shipping/receiving" areas and "warehouses" require a minimum outdoor airflow rate per person as well as a minimum per unit area rate, and "coin-operated laundries" need a higher minimum outdoor airflow rate per unit area than previously published.

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 s to 62.1-2007

Revise Table 6-1 as follows (for brevity only modified lines of the table are included):

TABLE 6-1 Minimum Ventilation Rates in Breathing Zone

Occupancy Category	People Outdoor Air Rate R_P		Area Outdoor Air Rate R_A		Notes	Default Values			Air Class
						Occupant Density (see Note 4)	Combined Outdoor Air Rate (see Note 5)		
	cfm/person	L/s·person	cfm/ft^2	L/s·m^2		#/1000 ft^2 or #/100 m^2	cfm/person	L/s·person	
Miscellaneous spaces									
Shipping/receiving	10-	5-	0.12	0.6	B	2-	70	35	~~1~~2
Warehouses	10-	5-	0.06	0.3	B	—			2
Retail									
Coin-operated laundries	7.5	3.8	~~0.06~~ 0.12	~~0.3~~ 0.6		20	~~11~~14	~~5.3~~7.0	2
Sports and Entertainment									
Disco/dance floors	20	10	0.06	0.3		100	21	10.3	~~1~~ 2

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.