

ASHRAE STANDARD

Ventilation and Acceptable Indoor Air **Quality in Low-Rise** Residential Buildings

Approved by the ASHRAE Standards Committee on June 24, 2006; by the ASHRAE Board of Directors on June 29, 2006; and by the American National Standards Institute on July 27, 2006.

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. Email: 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).

© Copyright 2006 ASHRAE, Inc.

ISSN 1041-2336



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 62.2 Cognizant TC: TC 5.12, Ventilation Requirements and Infiltration SPLS Liaison: Donald L. Brandt

David T. Grimsrud. Chair* John E. Difazio, Jr. Jane Malone* Steven J. Emmerich. Vice-Chair* Raymond E. Patenaude* Stephen C. Drumheller Erv L. Bales* Paul Francisco John P. Proctor* Terry M. Brennan* Marquam C. George* Paul H. Raymer H. E. Burroughs* Jack H. Goldman Joel G. Solis Bernardo Cardenal* Roger L. Hedrick* Don T. Stevens* Roy R. Crawford* Bruce A. Wilcox* John K. Holton* David C. Delaquila* Ted A. Williams* John J. Loyer*

Mark Diamond Joseph W. Lstiburek*

ASHRAE STANDARDS COMMITTEE 2005-2006

Richard D. Hermans, *Chair* David E. Knebel, *Vice-Chair* Donald L. Brandt Steven T. Bushby

Paul W. Cabot
Hugh F. Crowther
Samuel D. Cumming

Samuel D. Cummings, Jr.

Robert G. Doerr Hakim Elmahdy Roger L. Hedrick John F. Hogan Frank E. Jakob

Stephen D. Kennedy

Jay A. Kohler
James D. Lutz
Merle F. McBride
Mark P. Modera
Cyrus H. Nasseri
Stephen V. Santoro
Steven V. Skalko
David R. Tree
Jerry W. White, Jr.
James E. Woods
E. Murphy, BOD ExO

William E. Murphy, BOD ExO Ronald E. Jarnagin, CO

Claire B. Ramspeck, Assistant Director of Standards and Special Projects

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,
- d. permission to reprint portions of the Standard.

DISCLAIMER

ASHRAE uses its best efforts to promulgate Standards and Guidelines for the benefit of the public in light of available information and accepted industry practices. However, ASHRAE does not guarantee, certify, or assure the safety or performance of any products, components, or systems tested, installed, or operated in accordance with ASHRAE's Standards or Guidelines or that any tests conducted under its Standards or Guidelines will be nonhazardous or free from risk.

ASHRAE INDUSTRIAL ADVERTISING POLICY ON STANDARDS

ASHRAE Standards and Guidelines are established to assist industry and the public by offering a uniform method of testing for rating purposes, by suggesting safe practices in designing and installing equipment, by providing proper definitions of this equipment, and by providing other information that may serve to guide the industry. The creation of ASHRAE Standards and Guidelines is determined by the need for them, and conformance to them is completely voluntary.

In referring to this Standard or Guideline and in marking of equipment and in advertising, no claim shall be made, either stated or implied, that the product has been approved by ASHRAE.

^{*} Denotes members of voting status when the document was approved for publication.

(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 current infiltration degree-day limit is set too high and would allow homes in Florida and Georgia to meet the requirement with operable windows. In these locations, air conditioning is normally used to control indoor humidity. If the ventilation air is supplied by operable windows—as required to be certified by the authority having jurisdiction—it is likely to induce far more outdoor moisture than the system is capable of handling. Excess ventilation air in a hot, humid climate can cause an indoor air quality problem. Only by having a controlled ventilation rate can the dehumidification system be properly sized.

This addendum substitutes the IECC climate zone map for infiltration degree-days as the basis for the criteria of Section 4.1 Exception (a) without significantly changing the area included in the version of the addenda adopted previously by the SSPC. This change will make the requirements of Standard 62.2 much more understandable and increase its usability in the residential building industry. The map has been adopted for use in the International Energy Conservation Code, the International Residential Code, and ASHRAE Standard 90 and is used widely in the building code world. The map is also included in the current draft of ASHRAE Standard 169P, Weather Data for Building Design Standards, and can be referenced there when Standard 169 is published. Infiltration degree-days is a statistic that is not widely available and that is not in use in the building industry.

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 e to 62.2-2004

Revise the Exception to Section 4.1 as follows:

Exception to Section 4.1: Whole-building mechanical systems are not required provided that at least one of the following conditions is met —

- a. the building is in zone 3B or 3C of the IECC 2004 climate map (see Figure 8.2), a climate that has less than 4500 °F-day (2500 °C-day) infiltration degree-days as defined by ANSI/ASHRAE Standard 119 1988 (RA94), A Method of Determining Air Change Rates in Detached Dwellings (see Table 8.2.),
- b. the building has no central air conditioning and is in a climate having less than 500 heating °F-day base 65°F (280°C-day base 18°C), or
- c. the building is thermally conditioned for human occupancy for less than 876 hours per year—

and if the authority having jurisdiction determines that window operation is a locally permissible method of providing ventilation.

Delete the existing Table 8.2 and insert in its place Figure 8.2 shown on the next page.

Delete the existing Reference 1 in Section 8 as shown below and renumber the remaining references in Section 8 and in the body of the standard:

8. REFERENCES AND CLIMATE DATA

1. ANSI/ASHRAE Standard 119 1988 (RA 94), Air Leakage Performance for Detached Single Family Residential Buildings. American Society of Heating, Refrigerating and Air Conditioning, Engineers, Inc., Atlanta, GA.

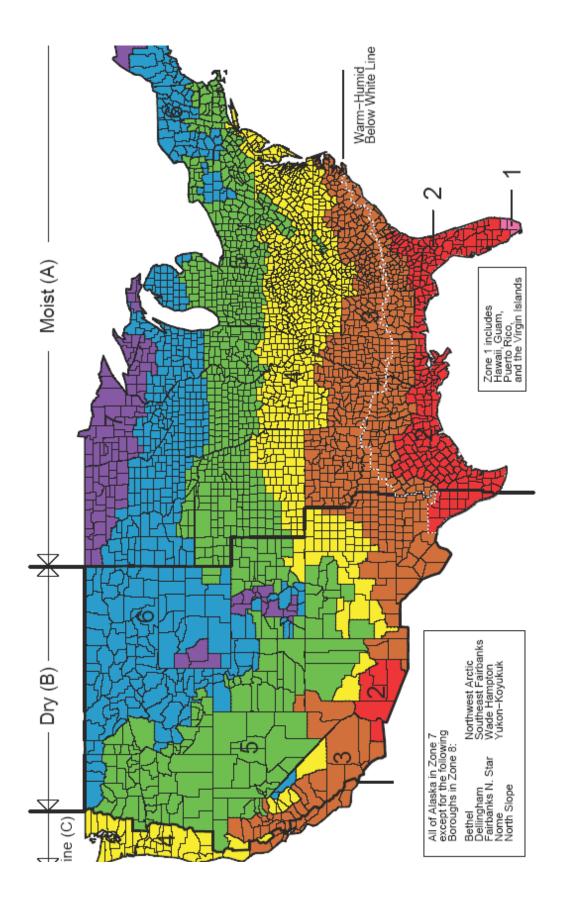


Figure 8.2 Climate Zones for United States Locations.

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.