

ANSI/ASHRAE Addendum z to
ANSI/ASHRAE Standard 62-2001



ASHRAE[®] STANDARD

Ventilation for Acceptable Indoor Air Quality

Approved by the ASHRAE Standards Committee on January 25, 2003; by the ASHRAE Board of Directors on January 30, 2003; and by the American National Standards Institute June 4, 2003.

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 and printed copies of a public review draft 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 U.S. and Canada).

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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 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.

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(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.)

FOREWORD

This addendum addresses air cleaning requirements for ozone. The current standard requires outdoor air assessment and recommends outdoor cleaning for contaminants of concern, but it does not require cleaning for ozone.

This addendum requires gaseous air cleaning when the outdoor ozone concentration is high, but it does not require air cleaning for other gaseous contaminants. Mandatory air cleaning for ozone is appropriate because of the large number of people living in non-attainment areas, that is, locations where the outdoor ozone levels exceed the EPA National Ambient Air Quality Standards (NAAQS), and the negative impact that ozone has on indoor air quality and occupant well-being. According to a simplified listing of non-attainment areas derived from Title 40, Code of Federal Regulations, part 81, 129,743,000 people (close to half of the population of the U.S.) live in ozone non-attainment areas. In addition, the cost/benefit ratio for ozone removal is expected to be quite low, compared with that of other outdoor contaminants. The cost of the required gaseous air cleaning varies as a function of system type. The incremental annual operating and maintenance cost is estimated to range from \$0.03 to \$0.07 per ft² per year, added to an estimated base operating and maintenance cost of about \$1.25 per ft² per year for the entire HVAC system. Note that while reducing the ozone concentration indoors may have a beneficial health effect, this requirement is primarily intended to reduce discomfort by reducing irritation due to ozone and its oxidation byproducts. Also note that buildings with air change rates of 1.5 air changes per hour or less (most office buildings) will be exempt from the ozone air-cleaning requirement, as will those buildings located in ozone non-attainment areas wherein the maximum reported hourly average concentration of ozone in the outdoor air is 0.160 ppm or less. This exemption is justified since chemical reactions at

building surfaces reduce indoor ozone concentration significantly in most non-attainment areas without additional filtration.

ADDENDUM 62z

Assuming publication of Addendum 62r, renumber Section 6.1.1.2 as 6.1.1.3, and add a new Section 6.1.1.2 as follows:

6.1.1.2 Ozone. Air cleaning devices for ozone shall be provided when the second-highest daily maximum one-hour average concentration exceeds 0.160 ppm (313 µg/m³). The ozone concentration for design purposes shall be determined in accordance with Appendix H to subchapter C, 40 CFR 50, or equivalent. **Note:** Monitored values for historical one-hour average ozone concentrations are available for United States locations at the AIRData web site, located under www.epa.gov. Such air-cleaning devices shall have a minimum volumetric ozone removal efficiency of 40% when installed, operated, and maintained in accordance with manufacturer recommendations and shall be approved by the authority having jurisdiction. Such devices shall be operated whenever outdoor ozone levels are expected to exceed 0.160 ppm (313 µg/m³). **Note:** For United States locations, the one-hour average ozone concentration is expected to exceed the 0.160 ppm (313 µg/m³) limit when the Air Quality Index forecast exceeds 151 (category red, purple, or maroon). This forecast is available in local media or at the AIRNow web site, located under www.epa.gov.

Exceptions:

Air cleaning for ozone is not required when:

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

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.