



# ASHRAE ADDENDA

2006 SUPPLEMENT

## Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size

Approved by the ASHRAE Standards Committee on January 21, 2006; by the ASHRAE Board of Directors on January 26, 2006; and by the American National Standards Institute on January 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. E-mail: [orders@ashrae.org](mailto: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).

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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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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.

**(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

*In this addendum Sections 5.16.1.1 and 5.16.1.6 have been revised in order to make the intent of the standard easier to achieve in actual practice. In the 1999 edition of Standard 52.2, the “10% shift along the particle sizing axis” referred to in these sections is not practical in actual use. The shape of the filtration efficiency curve for the reference filter typically flattens out at one or both ends of the particle size range (i.e., it is somewhat s-shaped, being flat at both ends with a transition in the mid-range). The present criteria are not applicable for such shapes. The revision changes the shift to be measured on the filtration efficiency axis and thereby makes the specification applicable in all cases.*

*Section 5.16.1.4 has also been revised to make it easier for testing laboratories to locate reference filters that meet the required efficiency specifications. The revision allows a wider selection of filters to fulfill the requirements while maintaining the utility of the reference filter tests.*

### Addendum a to 52.2-1999

*Revise Section 5.16.1.1 by making the following additions (shown by underlining) and deletions (shown by strikethrough):*

**5.16.1.1** For each test duct, a minimum of three identical reference filters shall be maintained by the testing facility solely for initial efficiency testing on a bi-weekly basis and shall not be exposed to dust loading. The three filters shall be labeled as “primary,” “secondary,” and “reserve.” The “primary” filter shall be checked every two weeks. If the filtration efficiency values shift by >5 percentage points ~~curve shows a~~

~~shift along the particle sizing axis of >10%~~ for any of the 12 particle sizing channels, the “secondary” filter<sup>2</sup> shall be tested.<sup>1</sup> If both the primary and secondary filters show >5 percentage points ~~>10%~~ along the particle sizing axis for any of the 12 particle sizing channels, the particle counter shall be recalibrated or other system maintenance performed as needed (e.g., clean sample lines) to restore the reference filter efficiency test to ≤5 percentage point shift ~~<10% shift along the particle sizing axis~~. The “reserve” filter shall be used should either the primary or secondary filters become unusable (e.g., damaged).

*Add the following new footnote to Section 5.16.1.1. For now, the new footnote will be given the number of footnote 1. When Standard 52.2 is republished, this footnote will be renumbered according to where it falls in the sequence of footnotes.*

<sup>1</sup>“Percentage points” is not to be confused with “percent.” As an example, the difference between efficiency values of 30% and 35% is 5 percentage points, not 5 percent.

*Revise Section 5.16.1.4 by making the following additions (shown by underlining) and deletions (shown by strikethrough):*

**5.16.1.4** The filtration efficiency of the reference filters shall pass through 50% efficiency in the particle diameter range of 0.7 ~~1.0~~ to 3.0 μm and be ≤30% ~~<20%~~ efficiency at 0.30 to 0.40 μm and >70% ~~>80%~~ efficiency at the 7.0 to 10.0 μm range.<sup>34</sup>

*Revise Section 5.16.1.6 by making the following additions (shown by underlining) and deletions (shown by strikethrough):*

**5.16.1.6** When either the primary or secondary filter shows >5 percentage points ~~>10%~~ along the particle sizing axis for any of the 12 particle size ranges and the secondary or reserve filter does not, the primary and/or secondary filter shall be replaced with an identical filter or filters, if available, or a new set of identical reference filters shall be obtained.<sup>35</sup>

## **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.