ANSI/ASHRAE/IES Addendum al to
ANSI/ASHRAE/IESNA Standard 90.1-2007

ASHRAE ADDENDA

Energy Standard for Buildings Except Low-Rise Residential Buildings

Approved by the ASHRAE Standards Committee on June 26, 2010; by the ASHRAE Board of Directors on June 30, 2010; by the IES Board of Directors on June 23, 2010; and by the American National Standards Institute on July 1, 2010.

These addenda were 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 Web site (www.ashrae.org) or in paper form from the Manager of Standards.

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

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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.

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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.

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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

This addendum adds skylight requirements in certain space types to promote daylighting energy savings. For background documentation on the analysis used to derive these proposed requirements, go to http://www.h-m-g.com/ASHRAE_Daylighting/

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 al to 90.1-2007

Revise the Standard as follows (I-P units).

5.5.4.2.2 Maximum *Skylight* Fenestration Area. The total skylight area shall not exceed 5% of the gross roof area.

5.5.4.2.3 Minimum *Skylight* Fenestration Area. In *enclosed spaces* that are:

a. greater than 10,000 ft^2,
b. directly under a roof with ceiling heights greater than 15 ft, and
c. one of the following space types: office, lobby, atrium, concourse, corridor, storage, gymnasium/exercise center, convention center, automotive service, manufacturing, non-refrigerated warehouse, retail, distribution/sorting area, transportation, or workshop,

the total *daylight area under skylights* shall be a minimum of half the floor area and either:

a. provide a minimum *skylight* area to *daylight area under skylights* of 3% with a skylight VT of at least 0.40 or
b. provide a minimum *skylight effective aperture* of at least 1%.

These skylights shall have a glazing material or diffuser with a measured haze value greater than 90% when tested according to ASTM D1003. *General lighting* in the daylight area shall be controlled as described in Section 9.4.1.4.

Exceptions to 5.5.4.2.3:

1. *Enclosed spaces* in climate zones 6 through 8.
2. *Enclosed spaces* with designed *general lighting* power densities less than 0.5 W/ft^2.
3. *Enclosed spaces* where it is documented that existing structures or natural objects block direct beam sunlight on at least half of the roof over the *enclosed space* for more than 1,500 daytime hours per year between 8 am and 4 pm.
4. *Enclosed spaces* where the *daylight area under rooftop monitors* is greater than 50% of the *enclosed space* floor area.
5. *Enclosed spaces* where it is documented that 90% of the skylight area is shaded on June 21in the Northern Hemisphere (December 21 in the Southern Hemisphere) at noon by permanent architectural features of the building.

Revise the Standard as follows (SI units).

5.5.4.2.2 Maximum *Skylight* Fenestration Area. The total skylight area shall not exceed 5% of the gross roof area.

5.5.4.2.3 Minimum *Skylight* Fenestration Area. In *enclosed spaces* that are:

a. greater than 900m^2,
b. directly under a roof with ceiling heights greater than 4.6 m, and
c. one of the following space types: office, lobby, atrium, concourse, corridor, storage, gymnasium/exercise center, convention center, automotive service, manufacturing, non-refrigerated warehouse, retail, distribution/sorting area, transportation, or workshop,

the total *daylight area under skylights* shall be a minimum of half the floor area and either:

a. provide a minimum *skylight* area to *daylight area under skylights* of 3% with a skylight VT of at least 0.40 or
b. provide a minimum *skylight effective aperture* of at least 1%.

These skylights shall have a glazing material or diffuser with a measured haze value greater than 90% when tested according to ASTM D1003. *General lighting* in the daylight area shall be controlled as described in Section 9.4.1.4.

Exceptions to 5.5.4.2.3:

1. *Enclosed spaces* in climate zones 6 through 8.
2. *Enclosed spaces* with designed *general lighting* power densities less than 5.4 W/m^2.
3. *Enclosed spaces* where it is documented that existing structures or natural objects block direct beam sunlight on at least half of the roof over the *enclosed space* for more than 1,500 daytime hours per year between 8 am and 4 pm.
4. *Enclosed spaces* where the *daylight area under rooftop monitors* is greater than 50% of the *enclosed space* floor area.
5. *Enclosed spaces* where it is documented that 90% of the skylight area is shaded on June 21in the Northern Hemisphere (December 21 in the Southern Hemisphere) at noon by permanent architectural features of the building.

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.