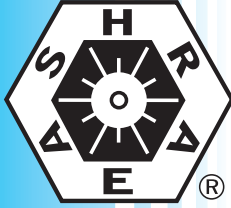


ANSI/ASHRAE/IESNA Addendum q to
ANSI/ASHRAE/IESNA Standard 90.1-2004



ASHRAE STANDARD

Energy Standard for Buildings Except Low-Rise Residential Buildings

Approved by the ASHRAE Standards Committee on January 21, 2006; by the ASHRAE Board of Directors on January 26, 2006; by IESNA on January 18, 2006; and by the American National Standards Institute on April 10, 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. 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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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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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.

(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

There are several different kinds of systems available to hoteliers that will set back temperature during periods that a room is unsold or unoccupied. Each gives a different amount of control to the hotelier.

Simple

The simplest system is a stand-alone unit that resets temperature and fan levels on the HVAC unit when the guest leaves the room. There are three main components to this system: a door switch, a "people detector," and a relay. The people detector is both an occupancy sensor and logic device. In combination with the door switch, it runs through a protocol after a delay to evaluate whether someone had left the room. If so, then it resets the temperature to a preset level. This level is determined by management and preprogrammed into the control at installation time.

Intermediate

This system combines the simple system with a new room thermostat. The thermostats may feature a large temperature display of current temperature enabling the guest to read the current temperature as well as to more accurately set the desired temperature. The savings from this system are greater than that of the simple system but are dependent upon the type of system they are replacing.

Advanced

A control system configured to take action based upon occupancy or opening and closure of doors can offer hoteliers a wide array of options. As an energy management control system, it can employ the simple system as part of its inputs. It then also monitors or controls guestroom locks and minibar access and enables remote central control for reprogramming, as well as HVAC and lighting operation during unoccupied times.

Installation of room occupancy controls in each guestroom can enable facility engineers to remotely monitor actual

room temperatures. Temperature setpoints can also be monitored and adjusted remotely by the facility engineer. Occupancy patterns will be established and recorded. Energy savings will be achieved through automated setbacks based on real-time monitoring of the rooms' occupancy.

Advanced system cost budgets were established using data provided by vendors. Savings are based on real occupancy patterns and are representative of guestroom HVAC controls. Using an unoccupied setback of 6°F, 12% of the uncontrolled costs can be avoided. At lower occupancy rates, the savings increase as the duration of the setback also increases.

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~striketrough~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes. Only these changes are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.

Addendum q to 90.1-2004 (I-P and SI Editions)

Revise the following text:

6.4.3.2 Setpoint Overlap Restriction. Where heating and cooling to a zone are controlled by separate zone thermostatic controls located within the zone, means (such as limit switches, mechanical stops, or, for DDC systems, software programming) shall be provided to prevent the heating setpoint from exceeding the cooling setpoint minus any applicable proportional band.

a. **Off-Hour Controls.** HVAC systems shall have the off-hour controls required by Sections 6.4.3.2.1 through 6.4.3.2.4.

Exceptions to 6.4.3.2:

- a. ~~HVAC systems serving hotel/motel guest rooms.~~
- b. a. HVAC systems intended to operate continuously.
- c. b. HVAC systems having a design heating capacity and cooling capacity less than 15,000 Btu/h that are equipped with readily accessible manual on/off controls.

**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.