ADDENDA

**ANSI/ASHRAE Addendum e to**
**ANSI/ASHRAE Standard 62.1-2022**

# Ventilation and Acceptable Indoor Air Quality

Approved by ASHRAE and the American National Standards Institute on September 30, 2022.

This addendum was 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. Instructions for how to submit a change can be found on the ASHRAE® website (www.ashrae.org/continuous-maintenance).

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**SPECIAL NOTE**

This American National Standard (ANS) is a national voluntary consensus Standard developed under the auspices of 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 Senior 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.

**(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

*Mold and microbial growth in buildings has been a persistent problem and health concern in all parts of the world. In 2019, the ASHRAE Board of Directors approved a major change to ASHRAE Standard 62.1 to reduce the risks of mold and moisture accumulation in mechanically cooled buildings. ASHRAE Standard 62.1-2022, Section 5.12, now instructs designers of ventilation systems to provide equipment and controls that limit the indoor air dew point to a maximum of 60°F (15°C) during both occupied- and unoccupied-mode operation.*

*However, problem of dampness and mold sometimes also occurs in buildings cooled by direct evaporation into the supply air. At present, Standard 62.1 does not address these risks, and the recent ASHRAE publication* Damp Buildings, Human Health and HVAC Design *makes it clear that damp buildings remain a concern for human health.*

*In light of that concern, the SSPC 62.1 considered the most appropriate way for designers to limit humidity in buildings and spaces served by direct evaporative cooling equipment.*

*A large proportion of evaporatively cooled buildings are industrial facilities and warehouses. These are rarely (if ever) overcooled. Condensation is less of a concern for buildings that have relatively warm indoor surfaces. That said, it must be admitted that if uncontrolled, some configurations of direct evaporative equipment can and sometimes do oversaturate the indoor air, leading to moisture absorption, accumulation, and building dampness.*

*However, evaporative cooling saves energy and provides appropriate thermal comfort at higher, more economical indoor air temperatures in hundreds of thousands of buildings all over the world. So while excessive dampness remains a concern, the energy-saving and comfort benefits of direct evaporative cooling should not be limited by a low dew point that applies to buildings held at cooler temperatures by mechanical cooling. Surface temperatures of materials inside evaporatively cooled buildings are typically quite warm compared to those in mechanically cooled buildings, so the risk of persistent dampness is lower. Therefore, limiting the indoor relative humidity rather than the dew point would be a more energy appropriate strategy.*

***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 Standard 62.1-2022

***Insert new Section 5.13 as shown. Existing sections are to be renumbered accordingly.***

**5.13 Direct Evaporatively Cooled Buildings**. Systems that include cooling by direct evaporation into the supply air shall be designed in accordance with the following subsections.

**5.13.1 Humidity Limits.** Air in each HVAC zone shall be limited to a maximum relative humidity of 65% whenever evaporative cooling equipment is operating.

**5.13.2 Analysis.** The designer shall calculate the relative humidity in the HVAC zone at the outdoor cooling design condition. The HVAC zone design condition and resulting relative humidity and temperature shall be included in the design documents to confirm that the design complies with the humidity limit defined in Section 5.13.1.

**5.13.3 Controls.** The design shall include at least one humidity sensor in each HVAC zone served by direct evaporative cooling equipment. Devices and controls shall be provided to maintain relative humidity of air in each HVAC zone at or below the limit defined in Section 5.13.1.

**Exceptions to 5.13:**

1. HVAC zones equipped with materials, assemblies, coatings, furnishings, and contents that resist microbial growth and that are not damaged by continuously high indoor air humidity.
2. Data centers, telephone closets, server rooms, and similar HVAC zones in mixed use buildings.

***Informative Notes:***

1. Examples of HVAC zones exempted by Exception 1 include shower rooms, swimming pool enclosures, kitchens, spa rooms, or semicooled warehouses that contain stored contents that are not damaged by continuously high indoor air humidity or microbial growth.
2. Examples of HVAC zones potentially exempted by Exception 2 are those with installed equipment or machinery that generates a continuous sensible cooling load that is high enough to reduce relative humidity to less than 65% when calculated using the surface temperatures of walls, floor, and ceiling, rather than when calculated using the temperature of air in the HVAC zone. Surfaces that remain relatively warm are at relatively low risk for either condensation or moisture accumulation large enough to support health-relevant dampness and microbial growth.

# 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.

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## About ASHRAE

Founded in 1894, ASHRAE is a global professional society committed to serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration, and their allied fields.

As an industry leader in research, standards writing, publishing, certification, and continuing education, ASHRAE and its members are dedicated to promoting a healthy and sustainable built environment for all, through strategic partnerships with organizations in the HVAC&R community and across related industries.

To stay current with this and other ASHRAE Standards and Guidelines, visit www.ashrae.org/standards, and connect on LinkedIn, Facebook, Twitter, and YouTube.

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