ANSI/ASHRAE Addendum e to
ANSI/ASHRAE Standard 15-2022

Safety Standard for Refrigeration Systems

Approved by ASHRAE and the American National Standards Institute on September 29, 2023.

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).

The latest edition of an ASHRAE Standard may be purchased on the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 180 Technology Parkway, Peachtree Corners, GA 30092. E-mail: orders@ashrae.org. Fax: 678-539-2129. Telephone: 404-636-8400 (worldwide), or toll free 1-800-527-4723 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/permissions.

© 2023 ASHRAE
ISSN 1041-2336
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:
1. interpretation of the contents of this Standard,
2. participation in the next review of the Standard,
3. offering constructive criticism for improving the Standard, or
4. permission to reprint portions of the Standard.

DISCLAIMER
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.

ASHRAE INDUSTRIAL ADVERTISING POLICY ON STANDARDS
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 ANSL.)

FOREWORD

Addendum e removes the terms “human comfort” and “other than human comfort” from the standard, as these terms are both undefined and do not adequately describe the types of systems intended to be covered. Sections 7.5, 7.6, 7.7, and 7.8 are rewritten to clarify the specific application types that they pertain to and to be more consistent in their approach. Informative notes are also added to provide more context on the product safety standards and equipment types in question.

Informative 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.

Modify Section 7 as shown. The remainder of Section 7 remains unchanged.

7. RESTRICTIONS ON REFRIGERANT USE

7.5.2 Application Restrictions by Refrigerant Safety Group

7.5.2.1 Refrigeration Systems for Human Comfort. Group A2, A3, B1, B2L, B2, and B3 refrigerants shall not be used in high-probability systems for human comfort. Use of Group A2L refrigerants shall be in accordance with Section 7.6.

7.5.2.1 High-Probability Air Conditioners, Heat Pumps, and Dehumidifiers. Air conditioners, heat pumps, or dehumidifiers classified as a high-probability system shall comply with the following:

a. Group A2, A3, B1, B2L, B2, and B3 refrigerants shall not be used.

b. Group A2L refrigerants shall be in accordance with Section 7.6.

7.5.2.2 Refrigeration Systems Other Than Human Comfort. High-probability systems for other than human comfort applications shall not use Class B refrigerants. Use of Group A2L refrigerants shall be in accordance with Section 7.7. Use of Group A2 refrigerants shall be in accordance with Section 7.8. Use of Group A3 refrigerants shall be in accordance with Section 7.5.3.

7.5.2.2 High-Probability Systems Other Than Air Conditioners, Heat Pumps, and Dehumidifiers. High-probability systems other than air conditioners, heat pumps, and dehumidifiers shall comply with the following:

a. Group B1, B2L, B2, and B3 refrigerants shall not be used.

b. Group A2L refrigerants for commercial refrigeration shall be in accordance with Section 7.7.

c. Group A2 refrigerants for commercial refrigeration shall be in accordance with Section 7.8.

d. Group A3 refrigerants shall be in accordance with Section 7.5.3.

7.6 High-Probability Air Conditioners, Heat Pumps, and Dehumidifiers Using Group A2L Refrigerants for Human Comfort. Air conditioners, heat pumps, or dehumidifiers classified as a high-probability systems and within the scope of UL 484 or UL 60335-2-40/CSA C22.2 No. 60335-2-40 shall comply with this section.

7.6.1* Refrigeration Systems with Air Circulation. Where a high probability system for human comfort an air conditioner, heat pump, or dehumidifier classified as a high-probability system and using Group A2L refrigerants has either

a. air circulation initiated by a refrigerant detector refrigerant detection system in compliance with Section 7.6.2.4 or

b. continuous air circulation,

the refrigerant charge quantity shall be limited per Equation 7-8.
7.7* High-Probability Commercial Refrigeration Systems using Group A2L Refrigerants for Refrigeration Systems Other Than Human Comfort. High-probability systems using Group A2L refrigerants for other than human comfort commercial refrigeration applications within the scope of UL 60335-2-89\[2^/\]CSA C22.2 No. 60335-2-89\[\text{ 8}^/\]shall comply with this section Sections 7.7.1 through 7.7.5.

7.8* High-Probability Commercial Refrigeration Systems using Group A2 Refrigerants for Refrigeration Systems Other Than Human Comfort. High-probability systems using Group A2 refrigerants for other than human comfort commercial refrigeration applications within the scope of UL 60335-2-89\[7^/\]/CSA C22.2 No. 60335-2-89\[\text{ 8}^/\]shall comply with this section. Refrigeration systems using Group A2 refrigerants shall be limited to listed self-contained systems containing no more than 0.459 \times \text{LFL} (lb), where LFL is in lb/1000 ft\(^3\) (13 \times \text{LFL} [kg], where LFL is in kg/m\(^3\)), provided that the system is installed in accordance with the listing and the manufacturer’s installation instructions. Refrigeration systems containing more than 0.141 \times \text{LFL} (lb) (4 \times \text{LFL} [kg]) in an independent circuit shall not be installed within 20 ft (6 m) of an open flame.

7.8.1 Listing and Installation Requirements. Refrigeration systems shall be listed to UL 60335-2-89\[7^/\]/CSA C22.2 No. 60335-2-89\[\text{ 8}^/\]and shall be installed in accordance with the listing and the manufacturer’s instructions.

Exception to 7.8.1: These requirements do not apply to industrial occupancies.

Modify Section 8 as shown. The remainder of Section 8 remains unchanged.

8. INSTALLATION RESTRICTIONS

8.7 Air Duct Installation. Air duct systems of air conditioners, heat pumps, or dehumidifiers classified as a high-probability system and air-conditioning equipment for human comfort using mechanical refrigeration shall be installed in accordance with approved safety standards, the requirements of the AHJ, and the requirements of Section 8.9.7.

Modify Informative Appendix A as shown. The remainder of Informative Appendix A remains unchanged.
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.
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.

Visit the ASHRAE Bookstore

ASHRAE offers its Standards and Guidelines in print, as immediately downloadable PDFs, and via ASHRAE Digital Collections, which provides online access with automatic updates as well as historical versions of publications. Selected Standards and Guidelines are also offered in redline versions that indicate the changes made between the active Standard or Guideline and its previous version. For more information, visit the Standards and Guidelines section of the ASHRAE Bookstore at www.ashrae.org/bookstore.

IMPORTANT NOTICES ABOUT THIS STANDARD

To ensure that you have all of the approved addenda, errata, and interpretations for this Standard, visit www.ashrae.org/standards to download them free of charge.

Addenda, errata, and interpretations for ASHRAE Standards and Guidelines are no longer distributed with copies of the Standards and Guidelines. ASHRAE provides these addenda, errata, and interpretations only in electronic form to promote more sustainable use of resources.