ASHRAE Standing Standard Project Committee 15
Cognizant TCs: 101, Custom Engineered Refrigeration Systems, and 9.1, Large Building Air-Conditioning Systems
SPLS Liaison: Drury B. Crawley
Staff Liaison: Brian Cox

Dennis R. Dorman*, Chair
Greg Relue*
Gregory A. Scrivener*, Vice-Chair
Brian J. Rodgers*
Danny M. Hale*, Secretary
Jeffrey M. Shapiro
John A. Atkinson
Eric M. Smith*
Michael D. Blanford
Russell C. Tharp*
Wayne K. Borrowman*
Douglas K. Tucker
Larry D. Burns
James T. VerShaw
James M. Calm
John I. Vucci*
Jim Caylor*
Wei Wang
Paul L. Doppel
Xudong Wang
Glenn Friedman*

Rakesh Goel

Sivakumar Gopalarayanan

Tim Halsor

Alexander Hillbrand

Glenn C. Hourahan

Phillip A. Johnson*

Jay A. Kohler

Scott M. MacBain*

Jeffrey Newel*

Jay Peters*

Hung M. Pham

Hungh N. Pham

Tim Halsor

Larry D. Burns

Michael D. Blanford

Wayne K. Borrowman*

Glenn Friedman*

Rakesh Goel

* Denotes members of voting status when the document was approved for publication

ASHRAE STANDARDS COMMITTEE 2017–2018

Steven J. Emmerich, Chair
Roger L. Hedrick
David Robin
Donald M. Brundage, Vice-Chair
Rick M. Heiden
Peter Simmonds
Niels Bidstrup
Jonathan Humble
Dennis A. Stanke
Michael D. Corbat
Srinivas Katipamula
Wayne H. Stoppelmoor, Jr.
Drury B. Crawley
Kwang Woo Kim
Richard T. Swierczyna
Julie M. Ferguson
Larry Kourma
Jack H. Zarour
Michael W. Gallagher
Arsen K. Melikov
Lawrence C. Markel, BOD ExO
Walter T. Grondzik
R. Lee Millies, Jr.
M. Ginger Scoggins, CO
Vinod P. Gupta
Karl L. Peterman
Susanna S. Hanson
Erick A. Phelps

Steven C. Ferguson, Senior Manager of Standards

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:
- interpretation of the contents of this Standard,
- participation in the next review of the Standard,
- offering constructive criticism for improving the Standard, or
d. 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.
FOREWORD

Addendum e identifies the requirements that need to be met when changing the refrigerant, within the same refrigerant class per ASHRAE Standard 34. This addendum also lists the restrictions regarding mixing refrigerants from different refrigerant classes so that the original refrigerant class does not change. For example, a small amount of A3 refrigerant is added to a product containing an A1 refrigerant in order to improve oil circulation at low temperatures. However, the blend does not change the refrigerant from the original A1 refrigerant class.

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 3 as follows.

3. DEFINITIONS

refrigerant designation: the unique identifying alphanumeric value or refrigerant number assigned to an individual refrigerant and published in ASHRAE Standard 34.

Modify Section 5 as follows.

5.3 Changing Refrigerant. A change in the type of refrigerant in a system shall not be made without the notification of the AHJ, the user, and due observance of safety requirements. The refrigerant being considered shall be evaluated for suitability.

5.3 Changing Refrigerant. Changes of refrigerant in an existing system to a refrigerant with a different refrigerant designation shall only be allowed where in accordance with Sections 5.3.1 through 5.3.4.

5.3.1 The change of refrigerant shall be approved by the owner.

5.3.2 The change of refrigerant shall be in accordance with one of the following:

a. Written instructions of the original equipment manufacturer.
b. An evaluation of the system by a registered design professional or by an approved nationally recognized testing laboratory that validates safety and suitability of the replacement refrigerant.
c. Approved by the AHJ.

5.3.3 Where the replacement refrigerant is classified into the same safety group, requirements that were applicable to the existing system shall continue to apply.

5.3.4 Where the replacement refrigerant is classified into a different safety group, the system shall comply with the requirements of this standard for a new installation, and the change of refrigerant shall require AHJ approval.

Modify Section 7 as follows.

7.5 Additional Restrictions

7.5.1 All Occupancies. Sections 7.5.1.1 through 7.5.1.8 apply to all occupancies.

[...]

7.5.1.7 Mixing of Refrigerants. Refrigerants, including refrigerant blends, with different refrigerant designations in ASHRAE Standard 34 shall only be mixed in a system in accordance with both of the following:

Exception:

a. Addition-The addition of a second refrigerant is allowed where specified by the equipment manufacturer to improve oil return at low temperatures. The refrigerant and amount added shall follow and is in accordance with the manufacturer’s written instructions.
b. The resulting mixture does not change the refrigerant safety group.
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
ASHRAE, founded in 1894, is a global society advancing human well-being through sustainable technology for the built environment. The Society and its members focus on building systems, energy efficiency, indoor air quality, refrigeration, and sustainability. Through research, Standards writing, publishing, certification and continuing education, ASHRAE shapes tomorrow’s built environment today.

For more information or to become a member of ASHRAE, visit www.ashrae.org.

To stay current with this and other ASHRAE Standards and Guidelines, visit www.ashrae.org/standards.

Visit the ASHRAE Bookstore
ASHRAE offers its Standards and Guidelines in print, as immediately downloadable PDFs, on CD-ROM, 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.