CONTENTS

ANSI/ASHRAE Standard 15.2-2024
Safety Standard for Refrigeration Systems in Residential Applications

SECTION	PAGE
Foreword	2
1 Purpose	2
2 Scope	2
3 Administrative	2
4 Definitions	3
5 General Requirements	5
6 Refrigerant Classification and Requirements	6
7 Location of Refrigeration Systems and Restrictions	6
8 Piping Requirements	7
9 Refrigerant Charge Limits	10
10 System Installation	24
11 Mechanical Ventilation	25
12 Add-On Heat Pumps	26
13 Normative References	26
Informative Appendix A: Explanatory Material	28
Informative Appendix B: General Service and Maintenance	33
Informative Appendix C: Informative References	35
Informative Appendix D: Addenda Description	36

NOTE

Approved addenda, errata, or interpretations for this standard can be downloaded free of charge from the ASHRAE website at www.ashrae.org/technology.

© 2024 ASHRAE

180 Technology Parkway · Peachtree Corners, GA 30092 · www.ashrae.org · All rights reserved.

ASHRAE is a registered trademark of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
ANSI is a registered trademark of the American National Standards Institute.

(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

Standard 15.2 is the low-rise residential companion to ANSI/ASHRAE Standard 15, Safety Standard for Refrigeration Systems.

Historically, safety requirements were not applied as rigorously to residential HVAC systems as they were to commercial systems, primarily because (a) all direct systems were restricted to A1 refrigerants (as classified by ANSI/ASHRAE Standard 34, Designation and Safety Classification of Refrigerants) *and listed to safety design standards such as UL 1995 and UL 60335-2-40, and (b) the risk of reaching and exceeding a refrigerant's acute toxicity exposure limit (ATEL) in the event of a complete release was very low.*

The need to reduce global warming potential (GWP) in residential applications has led to the use of mildly flammable refrigerants of the ASHRAE Standard 34 A2L classification and created a vacancy for an application safety standard that building code authors can depend on. Standard 15.2 was developed to fill this role. It serves as a stakeholder document to accommodate the use of A2L refrigerants in model building codes and is intended for use by manufacturers, installers, contractors, service technicians, building code officials, and others.

The 2022 edition of Standard 15.2 was developed in parallel with the 2019 edition of UL/CSA 60335-2-40, which enabled North American product safety standards for residential products to allow lower-flammability A2L refrigerants. UL/CSA 60335-2-40 was revised in 2022, shortly after the initial publication of Standard 15.2, to reflect the current state of research into refrigerant safety. In anticipation of January 1, 2025 restrictions on refrigerant GWP levels in the United States that will lead to the introduction of A2L refrigerants in all of the systems covered by this standard, the 2024 edition of Standard 15.2 has been updated with the latest requirements, aligned with the current edition of UL/CSA 60335-2-40, for use by manufacturers, installers, contractors, service technicians, and building code officials. For a full list of changes, see Informative Appendix D.

Standard 15.2 requires that all products be listed to a national product safety standard and installed per the manufacturer's installation instructions. Particular attention is paid to ensure that, in the event of a full release of the refrigerant charge, the concentration in the space remains safely below the lower flammability limit of the refrigerant used. Therefore, specific requirements are placed on which refrigerants can be used, the maximum allowable refrigerant charge, the accessories that can be used, and the interconnecting piping. To streamline use, Standard 15.2 provides a flowchart showing how to apply the standard, as well as numerous tables eliminating the direct use of equations. Informative Appendix A provides extensive explanatory information to aid in understanding the requirements and the equations used to create the tables.

ANSI/ASHRAE Standard 15.2 is under continuous maintenance. It is modified and updated based on feedback from users, changes in the science originating from ASHRAE and industry research, and industry changes that respond to the global interest in improved environmental responsibility. Interested parties can recommend changes to the standard by submitting a change proposal through the ASHRAE website.

1. PURPOSE

This standard specifies the minimum requirements for the safe design and installation of *refrigeration systems* used in residential applications.

2.* SCOPE

2.1 This standard applies to *listed refrigeration systems* in the following residential applications that are limited to serving only a single *dwelling unit* or *sleeping unit*:

a. One- and two-family *dwellings* and townhouses
b. Detached outbuildings associated with a one- or two-family *dwelling* or townhouse and located on the same property included in Section 2.1(a)
c. Individual *dwelling units* and *sleeping units* located in a *multifamily dwelling*

3. ADMINISTRATIVE

3.1 Precedence with Conflicting Requirements. Where there is a conflict between this standard and local building, electrical, fire, mechanical, or other adopted codes, the provisions of the local or adopted code *shall* take precedence unless otherwise stated in those codes.