



**BSR/ASHRAE Addendum s  
to ANSI/ASHRAE Standard 15-2019**

**Second Public Review Draft**

# **Proposed Addendum s to Standard 15-2019, Safety Standard for Refrigeration Systems**

**Second Public Review (June 2022)  
(Draft shows Proposed Independent Substantive  
Changes to Previous Public Review Draft)**

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at [www.ashrae.org/standards-research--technology/public-review-drafts](http://www.ashrae.org/standards-research--technology/public-review-drafts) and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at [www.ashrae.org/bookstore](http://www.ashrae.org/bookstore) or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, [www.ashrae.org](http://www.ashrae.org).

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHRAE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

© 2022 ASHRAE. This draft is covered under ASHRAE copyright. Permission to reproduce or redistribute all or any part of this document must be obtained from the ASHRAE Manager of Standards, 180 Technology Parkway NW, Peachtree Corners, GA 30092. Phone: 404-636-8400, Ext. 1125. Fax: 404-321-5478. E-mail: [standards.section@ashrae.org](mailto:standards.section@ashrae.org).

ASHRAE, 180 Technology Parkway NW, Peachtree Corners, GA 30092

**(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

*This proposed addendum s to ANSI/ASHRAE Standard 15-2019 is one of several addenda addressing the use of refrigerants other than Group A1. This proposed addendum addresses the use of refrigerant detection and mitigation requirements when a leak is detected. This second publication public review (PPR) addresses comments submitted on the first publication public review draft.*

---

**Note:** This public review draft of addendum s makes proposed independent substantive changes to the previous public review draft. These substantive changes to the previous public review draft and related changes to Standard 15-2019 are indicated by blue-colored text with double-underlining (for additions) and red-colored text with ~~striethrough~~ (for deletions), except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard shown in blue or red text 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 changes.

---

### Addendum s to Standard 15-2019

***Modify Section 3 as follows. The remainder of Section 3 remains unchanged.***

## 3. DEFINITIONS

### 3.1 Defined Terms

[ ... ]

**air circulation:** mechanically inducing airflow within a space or spaces connected by air ducts.

[ ... ]

**conditioned space:** an area, room, or space that is enclosed within the building thermal envelope that is directly or indirectly heated or cooled. Spaces are indirectly heated or cooled where 1. they connect through openings with conditioned spaces, 2. where they are separated from conditioned spaces by uninsulated walls, floors, or ceilings, or 3. where they contain uninsulated air ducts, tubing, or other sources of heating or cooling.

[ ... ]

**ductless HVAC:** an air conditioner, heat pump, or dehumidifier in which conditioned air is distributed directly into the conditioned space from the refrigerating system without the use of air ducts.

[ ... ]

~~**ventilation:** providing a space with ventilation air.~~

~~**\*ventilation air:** air from the outdoors or another indoor space delivered to a space via mechanical methods that is intended to dilute released refrigerant.~~

[ ... ]

***Modify Section 7 as follows. The remainder of Section 7 remains unchanged.***

## 7. RESTRICTIONS ON REFRIGERANT USE

[ ... ]

**7.6.2 Listing and Installation Requirements.** Refrigeration systems *shall* be listed and *shall* be installed in accordance with [Sections 7.6.2.1 through 7.6.2.5](#), the listing, the *manufacturer's* instructions, and any markings on the equipment restricting the installation.

[ ... ]

**7.6.2.3\* ~~Manufacturer's Refrigerant Detector~~ Requirements.** The following refrigeration systems *shall* have an integral *refrigerant detection system*:

[ ... ]

**7.6.2.4\*** The *refrigerant detection system shall* comply with the following:

a. Utilize a ~~non-adjustable~~ set point, [non-adjustable in the field, to generate an output signal](#) to initiate *mitigation actions*.

[ ... ]

c. [Capable of detecting the presence of a specified refrigerant corresponding to the refrigerant designation of the refrigerant contained in the refrigeration system.](#) ~~Capable of detecting the loss of the refrigerant contained in the refrigeration system.~~

[ ... ]

f. Energize ~~air~~ [air](#) circulation fans of the equipment upon failure of a self-diagnostic check.

g. [Generate](#) ~~Initiate~~ an output signal in not more than 30 seconds when exposed to a *refrigerant* concentration of 25% LFL (+0%, -1%).

**7.6.2.5\* Mitigation Action Requirements.** ~~The output signal of Section 7.6.2.4(g) shall complete the~~ [The following mitigation actions shall be completed in not more than within 15 seconds after initiation of the output signal of Section 7.6.2.4\(g\), and shall be maintained for at least 5 minutes after the output signal has reset:](#)

a. Energize the ~~air~~ [air](#) circulation fan(s) of the equipment per *manufacturer's* instructions.

[ ... ]

c. Activate mechanical ~~ventilation~~ [ventilation](#), if required by Section 7.6.4.

[ ... ]

e. ~~Activate safety~~ [Safety](#) shut-off valves utilized to reduce *releasable refrigerant charge shall be closed*.

[ ... ]

**7.6.4 Compressors and Pressure Vessels Located Indoors. ...**

[ ... ]

b. The space where the equipment is located *shall* be provided with a mechanical ventilation system in accordance with Section 7.6.4(c) and a ~~refrigerant detector~~ [refrigerant detection system](#) in accordance with Section ~~7.6.2.47-6.5~~. The mechanical ventilation system *shall* be started when the ~~refrigerant detector~~ [refrigerant detection system](#) senses *refrigerant* in accordance with Section ~~7.6.2.47-6.5~~. The mechanical ventilation system *shall* continue to operate for at least five minutes after the ~~refrigerant detector~~ [refrigerant detection system](#) has sensed a drop in the *refrigerant* concentration below the value specified in Section ~~7.6.2.4(g)7-6.5(b)~~.

[ ... ]

**Modify Informative Appendix A as follows. The remainder of Informative Appendix A remains unchanged.**

(This appendix 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.)**

## INFORMATIVE APPENDIX A—EXPLANATORY MATERIAL

Sections of the standard with associated explanatory information in this appendix are marked with an asterisk “\*” after the section number, and the associated appendix information is located in a corresponding section number preceded by “A”.

[ ... ]

### ~~A3.1 Defined Terms~~

~~[ ... ]~~

~~*ventilation air*: the *ventilation air* requirements in ANSI/ASHRAE Standard 15 are different from those in ANSI/ASHRAE Standard 62.1, *Ventilation and Acceptable Indoor Air Quality*, in that they are not intended to control indoor air quality. Rather, *ventilation air* in Standard 15 serves as a safety mitigation method for reducing the *refrigerant* concentration within a space.~~

[ ... ]

A7.6.2.5(c) The ventilation requirements in ANSI/ASHRAE Standard 15 are different from those in ANSI/ASHRAE Standard 62.1, *Ventilation and Acceptable Indoor Air Quality*, in that they are not intended to control indoor air quality. Rather, ventilation in Standard 15 serves as a safety mitigation method for reducing the *refrigerant* concentration within a space.

A7.6.2.5(e) *Safety shut-off valves* located on the *lowside* of the refrigeration system may remain open during *pumpdown* to reduce *releasable refrigerant charge*. The *pumpdown* cycle should not reduce the *lowside* pressure below atmospheric pressure, and the *safety shut-off valves* must close at the end of the *pumpdown* cycle to be considered to meet this requirement.

A7.6.2.5(f) Potential ignition sources include those items that are defined in ANSI/UL 60335-2-40 and CAN/CSA C22.2 No. 60335-2-40, including arcs and sparks from electrical components in Clause 22.115, and hot surfaces and flames in Clause 22.117.