ADDENDA

ANSI/ASHRAE Addendum g to
ANSI/ASHRAE Standard 15-2019

Safety Standard for Refrigeration Systems

Approved by ASHRAE and the American National Standards Institute on August 31, 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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FOREWORD

Addendum g to ANSI/ASHRAE Standard 15-2019 makes several changes addressing refrigerant concentration limits (RCLs) of occupied spaces by adding new definitions and the concept of releasable charge (also found in IIAR2, UL/CSA 60335-2-40, and IEC 60335-2-40) and further utilizing a new concept added to Standard 15-2019 by Informative Appendix A (as published in Addendum f). Addendum g completely rewrites Section 7.2, "Concentration Limits," and Section 7.3, "Volume Calculations," by reversing the existing sections, first addressing the volume of spaces for consideration (new Section 7.2), then determining acceptable refrigerant charge quantity (new Section 7.3). Additionally, the addendum adds several definitions for connected spaces*,* effective dispersal volume*,* effective dispersal volume charge (EDVC)*,* independent circuit*,* releasable refrigerant charge *(m_{rel}), and* system refrigerant charge *(m_s).*

New equations have been added for the following to further address the concept of connected spaces:

- *Natural ventilation opening size required for Class 1 refrigerants*
- *Natural ventilation opening size required for Class 2 and Class 3 refrigerants*
- *Effective dispersal volume charge*
- *Releasable charge*

Release mitigation controls are included, and a flow chart has been added to clarify the compliance path for chart limits.

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 g to Standard 15-2019

Modify Section 3 as shown. The remainder of Section 3 remains unchanged.

3. DEFINITIONS

3.1 Defined Terms

[. . .]

connected spaces: two or more spaces connected by natural ventilation, a ducted air distribution system, or mechanical ventilation.

[. . .]

effective dispersal volume: the volume of a space or *connected spaces* in which leaked *refrigerant* will disperse.

effective dispersal volume charge (EDVC): the maximum *refrigerant* charge permitted for an *effective dispersal volume*.

[. . .]

independent circuit: a closed refrigeration circuit that is arranged in such a manner that, in the event of a single point failure, the release of *refrigerant* is limited to only the quantity contained within the refrigeration circuit.

[. . .]

****refrigerant detection system:*** a system or portion of a combination system that utilizes one or more devices to detect the presence of a *specified refrigerant* at a *specified* concentration and initiates one or more *mitigation actions* required by this standard

[. . .]

refrigerant detector: a device that is capable of sensing the presence of *refrigerant* vapor.

[. . .]

releasable refrigerant charge (m_{rel}): a portion of the *system refrigerant charge* that can be released into a space as a result of a single point failure.

[. . .]

system refrigerant charge (m_s): the total mass of *refrigerant* in an *independent circuit* of a system, including both factory and field *refrigerant* charge.

[. . .]

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

7. RESTRICTIONS ON REFRIGERANT USE

[. . .]

~~**7.2 *Refrigerant Concentration Limits.*** The concentration of *refrigerant* in a complete discharge of each *independent circuit* of high-probability systems *shall not* exceed the amounts shown in ASHRAE Standard 34-2, Table 4-1 or 4-2, except as provided in Sections 7.2.1 and 7.2.2 of this standard. The volume of *occupied space shall* be determined in accordance with Section 7.3.~~

~~**Exceptions to 7.2:**~~

1. ~~*Listed* equipment containing not more than 6.6 lb (3 kg) of *refrigerant*, regardless of its *refrigerant* safety classification, is exempt from Section 7.2, provided the equipment is installed in accordance with the listing and with the *manufacturer's* installation instructions.~~
2. ~~*Listed* equipment for use in laboratories with more than 100 ft^2 (9.3 m^2) of space per person, regardless of the *refrigerant* safety classification, is exempt from Section 7.2, provided that the equipment is installed in accordance with the listing and the *manufacturer's* installation instructions.~~

~~**7.2.1 Institutional *Occupancies*.** The amounts shown in ASHRAE Standard 34-2, Table 4-1 or 4-2, *shall* be reduced by 50% for all areas of institutional *occupancies*. Also, the total of all Group A2, A3, B2, and B3 *refrigerants shall not* exceed 550 lb (250 kg) in the occupied areas and *machinery rooms* of institutional *occupancies*.~~

~~**7.2.2 Institutional *Occupancies* and Refrigerated Rooms.** Section 7.2 does not apply in industrial *occupancies* and refrigerated rooms where the following seven conditions are met:~~

~~a. Spaces containing the *machinery* are separated from other *occupancies* by tight construction with tight-fitting doors.~~
~~b. Access is restricted to authorized personnel.~~
~~c. *Refrigerant detectors* are installed with the sensing location and alarm level as required in refrigerating *machinery rooms* in accordance with Section 8.11.5.~~
~~d. Open flames and surfaces exceeding 800°F (426.7°C) are not permitted where any Group A2, A3, B2, or B3 *refrigerant* is used.~~
~~e. All electrical equipment conforms to Class 1, Division 2, of NFPA 70.3 where the quantity of any Group A2, A3, B2, or B3 *refrigerant* in an *independent circuit* would exceed 25% of the *LFL* upon release to the space based on the volume determined by Section 7.3.~~
~~f. All *refrigerant*-containing parts in systems exceeding 100 *hp* (74.6 kW) *compressor* drive power, except *evaporators* used for refrigeration or dehumidification, *condensers* used for heating, control, and *pressure relief valves* for either, *low-probability pumps*, and connecting *piping*, are located either in a *machinery room* or outdoors.~~

~~**7.3 Volume Calculations.** The volume used to convert from *refrigerant concentration limits* to *refrigerating system* quantity limits for *refrigerants* in Section 7.2 *shall* be based on the volume of space to which *refrigerant* disperses in the event of a *refrigerant* leak.~~

~~**7.3.1 Nonconnecting Spaces.** Where a *refrigerating system*, or a part thereof, is located in one or more enclosed *occupied spaces* that do not connect through permanent openings or HVAC *ducts*, the volume of the smallest *occupied space shall* be used to determine the *refrigerant* quantity limit in the system. Where different stories and floor levels connect through an open atrium or mezza-~~

~~nine arrangement, the volume to be used in calculating the *refrigerant* quantity limit *shall* be determined by multiplying the floor area of the lowest space by 8.2 ft (2.5 m).~~

~~**7.3.2 Ventilated Spaces.** Where a *refrigerating system*, or a part thereof, is located within an air handler, in an air distribution *duct* system, or in an *occupied space* served by a mechanical ventilation system, the entire air distribution system *shall* be analyzed to determine the worst-case distribution of leaked *refrigerant*. The worst case or the smallest volume in which the leaked *refrigerant* disperses *shall* be used to determine the *refrigerant* quantity limit in the system, subject to the following criteria.~~

~~**7.3.2.1 Closures.** Closures in the air distribution system *shall* be considered. If one or more spaces of several arranged in parallel can be closed off from the source of the *refrigerant* leak, their volumes *shall not* be used in the calculation.~~

~~**Exceptions to 7.3.2.1:** The following closure devices are not considered:~~

1. ~~Smoke dampers, fire dampers, and combination smoke/fire dampers that close only in an emergency not associated with a *refrigerant* leak.~~
2. ~~Dampers, such as variable air volume (VAV) boxes, that provide limited closure where airflow is not reduced below 10% of its maximum (with the fan running).~~

~~**7.3.2.2 Plenums.** The space above a suspended ceiling *shall not* be included in calculating the *refrigerating system* quantity limits unless such space is part of the air supply or return system.~~

~~**7.3.2.3 Supply and Return Ducts.** The volume of the supply and return *ducts* and plenums *shall* be included when calculating the *refrigerating system* quantity limits.~~

7.2* Volume Calculations

7.2.1 General. The *effective dispersal volume* identified in Section 7.3, "*Refrigerant* System Charge Limits," into which *refrigerant* will disperse in the event of a release *shall* be calculated in accordance with this section. Volume calculations *shall* evaluate each *space* or *connected space* relevant to each refrigeration system. The smallest volume into which *refrigerant* disperses *shall* be used to determine the *refrigerant* quantity limit in the system.

7.2.2 *Refrigerant* Groups

7.2.2.1 Flammability Class 1. For Group A1 and B1 *refrigerants*, the *effective dispersal volume shall* be based on the *occupied space* served by a refrigeration system. Outdoor spaces *shall not* be included.

7.2.2.2 Flammability Class 2L, 2, and 3. For Group A2L, A2, A3, B2L, B2, and B3 *refrigerants*, the *effective dispersal volume shall* be based on the occupied or unoccupied space served by a refrigeration system.

7.2.3 Volume Calculations. The *effective dispersal volume* used to calculate the *effective dispersal volume charge* (*EDVC*) given in Section 7.3 *shall* be based on the volume calculations *specified* in Sections 7.2.3.1 through 7.2.3.4.

7.2.3.1 Room Volume. The *effective dispersal volume shall* be established by the following physical enclosure elements: walls, floors, ceilings, windows or doors which can be closed, and partitions connecting to and extending from the finished floor to more than 5.5 ft (1.7 m) above the floor. Where different stories and floor levels connect through an open atrium or mezzanine, the *effective dispersal volume shall* be determined by multiplying the floor area of the lowest floor level by 8.2 ft (2.5 m) ceiling height.

7.2.3.1.1 Exempted Spaces. The areas that contain only continuous *refrigerant piping*, or contain only joints and connections that have been tested in accordance with Section 10.1, are exempt from the EDV calculation unless these areas are part of *connected spaces* per Section 7.2.3.2.

7.2.3.2 *Connected Spaces* via Natural Ventilation. *Connected spaces shall* be on the same floor. *Connected spaces shall* be provided with permanent natural ventilation opening(s). Permanent natural ventilation opening(s) *shall* be sized in accordance with Section 7.2.3.2.1, 7.2.3.2.2, or 7.2.3.2.3. The lower edge of the natural ventilation opening between rooms *shall* be located a maximum of 12 in. (305 mm) above the finished floor. The area of any openings above 12 in. (305 mm) from the floor *shall not* be considered. The required size of opening(s) *shall* be based on the net free area.

7.2.3.2.1 Natural Ventilation Opening for Group A1 *Refrigerants*. The minimum size of the opening for a Group A1 *refrigerant* (A_{vent}) *shall* be calculated by the following formula:

$$A_{vent} = \frac{m_{rel} - m_{room}}{RCL \times 0.833} \times \sqrt{\frac{A}{g \times m_{room}} \times \frac{M}{M - 29}} \quad \text{(I-P)}$$

$$A_{vent} = \frac{m_{rel} - m_{room}}{RCL \times 208} \times \sqrt{\frac{A}{g \times m_{room}} \times \frac{M}{M - 29}} \quad \text{(SI)}$$

where

A_{vent} = minimum area of a permanent opening, ft^2 (m^2)

m_{rel} = *releasable refrigerant charge*, lb (kg)

m_{room} = allowable *refrigerant* charge of an individual room, lb (kg); V_{eff}, used to calculate *EDVC*, is the volume of an individual room

RCL = *refrigerant concentration limit*, lb per 1000 ft^3 (kg/m^3)

A = actual area of the individual room, ft^2 (m^2)

M = relative molar mass of the *refrigerant*, dimensionless

g = acceleration due to gravity, 32.2 ft/s^2 (9.81 m/s^2)

0.833 = I-P conversion factor

208 = SI conversion factor

29 = relative molar mass of air, dimensionless

The equation is not applicable for *refrigerants* with a relative molar mass less than 42.

7.2.3.2.2 Natural Ventilation Opening for Group A2L, A2, or A3 *Refrigerants*. The minimum size of the opening for a Group A2L, A2, or A3 *refrigerant* (A_{vent}) *shall* be calculated using the following formula:

$$A_{vent} = \frac{m_{rel} - m_{room}}{LFL \times 0.417} \times \sqrt{\frac{A}{g \times m_{room}} \times \frac{M}{M - 29}} \quad \text{(I-P)}$$

$$A_{vent} = \frac{m_{rel} - m_{room}}{LFL \times 104} \times \sqrt{\frac{A}{g \times m_{room}} \times \frac{M}{M - 29}} \quad \text{(SI)}$$

where

A_{vent} = minimum area of a permanent opening, ft^2 (m^2)

m_{rel} = *releasable refrigerant charge*, lb (kg)

m_{room} = allowable *refrigerant* charge of an individual room, lb (kg); V_{eff}, used to calculate *EDVC*, is the volume of an individual room

LFL = *lower flammability limit*, lb per 1000 ft^3 (kg/m^3)

A = actual area of the individual room, ft^2 (m^2)

M = relative molar mass of the *refrigerant*, dimensionless

g = acceleration due to gravity, 32.2 ft/s^2 (9.81 m/s^2)

0.417 = I-P conversion factor

104 = SI conversion factor

29 = relative molar mass of air, dimensionless

The equation is not applicable for *refrigerants* with a relative molar mass less than 42.

7.2.3.3 *Connected Spaces* via Ducted Air Distribution System. Where a refrigeration system, or a part thereof, is located within an air distribution *duct* system, or in a space served by an air distribution *duct* system, the entire air distribution system *shall* be analyzed to determine the worst-case distribution of leaked *refrigerant*. The *effective dispersal volume* in which the leaked *refrigerant* disperses *shall* be used to determine the *EDVC* in the system, subject to the criteria in the following subsections.

7.2.3.3.1 Closures. Closures in the air distribution system *shall* be considered. If one or more spaces of several arranged in parallel can be closed off from the source of the *refrigerant* leak, their

volumes *shall not* be used in the calculation. Smoke dampers, fire dampers, and combination smoke/fire dampers that close only in an emergency not associated with a *refrigerant* leak *shall not* be classified as closure devices. Dampers, such as variable-air-volume (VAV) boxes, *shall not* be considered a closure provided the airflow is not reduced below 10% of its maximum.

7.2.3.3.2 Plenums. The volume of an air ceiling plenum or floor plenum *shall* be included when calculating the *effective dispersal volume* where the plenum space is a part of the refrigeration system air distribution system.

7.2.3.3.3 Supply and Return *Ducts*. The volume of the supply and return *ducts shall* be included when calculating the *effective dispersal volume*.

7.2.3.4 *Connected Spaces* via Mechanical Ventilation. Where two or more spaces are connected by a mechanical ventilation system complying with the requirements of Section 7.6.4, the volume of all such *connected spaces shall* be included in the *effective dispersal volume* used to calculate the *EDVC* in Section 7.3, "*Refrigerant* System Charge Limits."

7.2.3.4.1 Ductwork. The volume of the transfer air ductwork *shall* be included when calculating the *effective dispersal volume*.

7.3 *Refrigerant* System Charge Limits. The *effective dispersal volume charge* (*EDVC*) *shall* be calculated in accordance with this section. All refrigeration system*s shall* follow the compliance path in Figure 7-1 and Figure 7-2 and the limitation of Section 7.3.2.

7.3.1 *EDVC* Calculation. The maximum charge permitted for an *effective dispersal volume shall* be calculated as follows:

$$EDVC = RCL \times V_{eff} \times F_{occ} \quad \text{(I-P)}$$

$$EDVC = RCL \times V_{eff} \times F_{occ}/1000 \quad \text{(SI)}$$

where

$EDVC$ = *effective dispersal volume charge* in lb (kg)

RCL = *refrigerant concentration limit* in lb/ft^3 (g/m^3)

V_{eff} = *effective dispersal volume* in ft^3 (m^3), established using Sections 7.2.1 through 7.2.3

F_{occ} = *occupancy* adjustment factor (For all *occupancies* other than institutional, F_{occ} has a value of 1. For institutional *occupancies*, F_{occ} has a value of 0.5.)

7.3.2 Institutional *Occupancies Refrigerant* Systems Charge Limits. For institutional *occupancies*, the total *refrigerant* charge of all refrigeration system*s* containing Group A2, A3, B2, and B3 *refrigerants* in occupied areas and *machinery rooms shall not* exceed 550 lbs (250 kg).

7.3.3 Industrial *Occupancies* and Refrigerated Rooms. Industrial *occupancies* and refrigerated rooms *shall* comply with the following conditions:

a. Spaces containing the *machinery* are separated from other *occupancies* by tight construction with tight-fitting doors.
b. *Access* is restricted to authorized personnel.
c. *Refrigerant detectors* are installed with the sensing location and alarm level as required in refrigeration *machinery rooms* in accordance with Section 8.11.5.
d. Surfaces exceeding 800°F (426.7°C), or open flames, are not permitted where any Group A2, A3, B2, or B3 *refrigerant* is used.
e. Surfaces exceeding 1290°F (700°C), or open flames, are not permitted where any Group A2L or B2L *refrigerant* is used.
f. Where loss of the *releasable refrigerant charge* of Group A2, A3, B2, or B3 *refrigerant* would result in an average *refrigerant* concentration that exceeds 25% of the *lower flammability limit* (*LFL*), electrical equipment in the space is Class I, Division 2, in accordance with NFPA 70[3].
g. *Refrigerant* containing parts in systems exceeding 100 hp (74.6 kW) *compressor* drive power, except *evaporators* used for refrigeration or dehumidification, condensers used for heating, control, and *pressure relief valves* for either, and connecting *piping*, are located either in a *machinery room* or outdoors.

7.3.4 *Releasable Refrigerant Charge* (m_{rel}) Determination. The *releasable refrigerant charge* (m_{rel}) *shall* comply with the requirements of Section 7.3.1. The *releasable refrigerant charge shall* be determined in accordance with Section 7.3.4.1 through Section 7.3.4.4. *Releasable refrigerant*

charge determination in accordance with Sections 7.3.4.3 and 7.3.4.4 *shall not* be permitted for institutional *occupancies*.

7.3.4.1 Single Circuit. For single-circuit systems, the *releasable refrigerant charge* (m_{rel}) *shall* be the *system refrigerant charge*, unless release mitigation controls are provided in accordance with Section 7.3.4.4.

7.3.4.2 Multiple *Independent Circuits*. For systems with multiple *independent circuits*, the *releasable refrigerant charges shall* be the *refrigerant charges* in each *independent circuit*, unless release mitigation controls are provided in accordance with Section 7.3.4.4.

7.3.4.3 Calculating *Releasable Refrigerant Charge*. For *releasable refrigerant charge*, release mitigation controls complying with Section 7.3.4.4 *shall* be provided to limit a release by automatically isolating leaking *piping* or equipment. The *releasable refrigerant charge* (m_{rel}) *shall* be determined based on a release of the volume of *refrigerant* that will occur prior to operation of the release mitigation control plus the volume of *refrigerant* contained downstream of a release mitigation control in accordance with the following equation:

$$m_{rel} = (t_{r1} \times 0.0062) + m_{r2} + m_{r3} \quad \text{(I-P)}$$

$$m_{rel} = (t_{r1} \times 0.0028) + m_{r2} + m_{r3} \quad \text{(SI)}$$

where

t_{r1} = time before the leak is detected per Section 7.6.5

0.0062 = leakage rate in lb/s

0.0028 = leakage rate in kg/s

m_{r2} = leakage between the detection of the leak and the closing of the safety shutoff valve, lb (kg)

m_{r3} = leakage in the *piping* downstream of the safety shutoff valve after the valve is closed, lb (kg)

$$m_{r2} = t_{c1} \times 0.0062 \quad \text{(I-P)}$$

$$m_{r2} = t_{c1} \times 0.0028 \quad \text{(SI)}$$

where

t_{c1} = time from when a leak is detected until the safety shutoff valve closes

0.0062 = leakage rate in lb/s

0.0028 = leakage rate in kg/s

$$m_{r3} = \Sigma V_{pipe} \times \rho_{ref}$$

where

V_{pipe} = internal volume of each section of the *piping* and heat exchanger coil downstream of the safety shutoff valve, ft^3 (m^3)

ρ_{ref} = density of the *refrigerant* in each section of pipe downstream of the safety shutoff valve, lb_m/ft^3 (kg/m^3)

7.3.4.4 Release Mitigation Controls. Release mitigation controls used to limit the *releasable refrigerant charge* (m_{rel}) *shall* comply with the following:

a. Release mitigation systems *shall* be components of a refrigeration system that is *listed* per ANSI/UL 60335-2-40 and CAN/C22.2 No. 60335-2-40, or ANSI/UL 60335-2-89 and CAN/C22.2 No. 60335-2-89, and evaluated by the *nationally recognized* testing *laboratory* as part of the listing.

b. Release mitigation controls *shall* only be permitted for reducing the *releasable refrigerant charge* (m_{rel}) on a refrigeration system where each indoor unit has a cooling capacity of 5 tons (17.5 kW) or less.

c. Release mitigation controls *shall* be activated by a *refrigerant detection system*. A *refrigerant detector shall* be located either in all refrigeration equipment serving the spaces or in all spaces served by the release-mitigation-controlled circuit. The *refrigerant detector shall* activate the

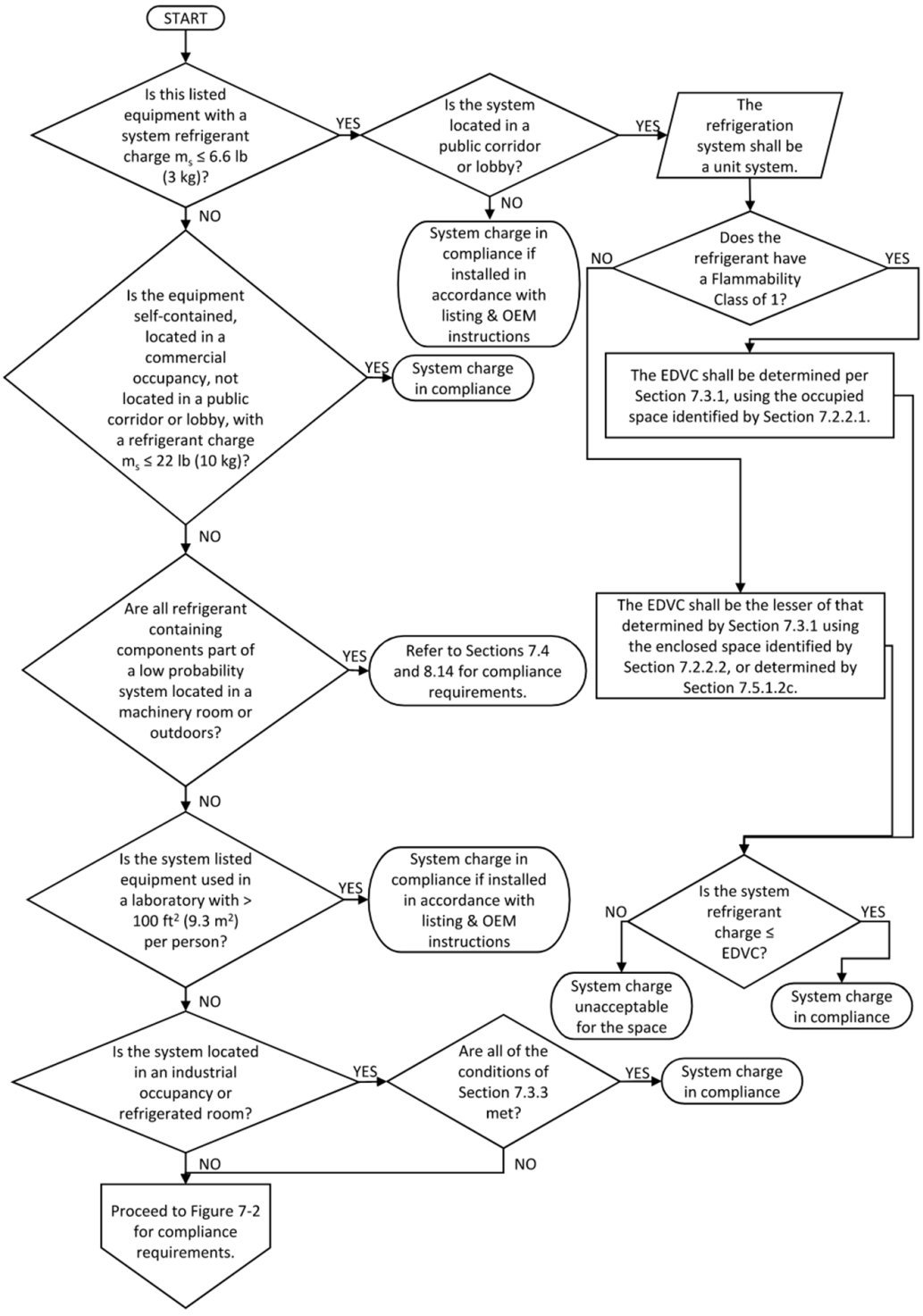

Figure 7-1 *Refrigerant* system charge limit compliance path—Part 1.

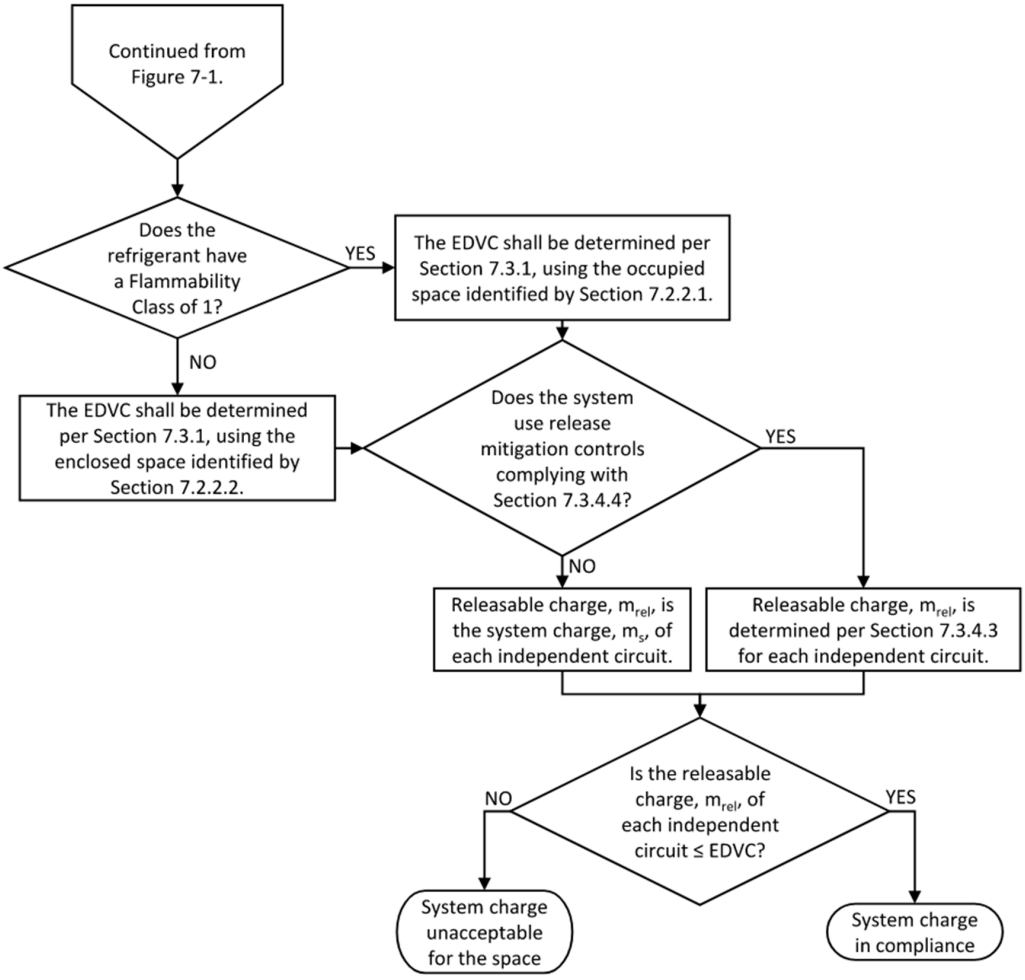

Figure 7-2 *Refrigerant* system charge limit compliance path—Part 2.

release mitigation controls and isolate all possible paths of *refrigerant* that can leak into the space(s).

d. In the event of a failure of the release mitigation controls or a *refrigerant detector*, the release mitigation controls *shall* isolate all possible paths of *refrigerant* that can leak into the space(s).

e. *Refrigerant detectors shall* comply with Section 7.6.5 and *shall* activate the mitigation controls per Section 7.6.2.4. For Group A1 *refrigerants*, 100% of *RCL shall* be substituted in place of 25% of *LFL*.

f. The location of *refrigerant* mitigation controls *shall* be marked in accordance with the requirements of ASME A13.1.

g. Release mitigation controls *shall* be tested in accordance with Section 10, "Operation and Testing."

Modify Informative Appendix A as shown. The remainder of Informative Appendix A remains unchanged. (Note: This addendum reflects changes made by Addendum f to Standard 15-2019, which can be downloaded from the ASHRAE website at https://www.ashrae.org/technical-resources/standards-and-guidelines/standards-addenda.)

(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"~~.

Section 3.1, "Defined Terms"

refrigerant detection system: the product safety standard addresses both *refrigerant detection systems* and leak detection systems. In the product safety standard, a leak detection system is defined as "a sensing system which responds to *refrigerant* leaking from a *refrigerating system*." A leak detection system may include gas sensing, ultrasonic, or other such methods that meet the standards ANSI/UL 60335-2-40 and CAN/C22.2 No. 60335-2-40, or ANSI/UL 60335-2-89 and CAN/C22.2 No. 60335-2-89.

refrigerant detector: "*refrigerant* sensor" is another term for *refrigerant detector*. A *refrigerant* sensor is a sensing element combined with electronic circuitry that provides a digital output or an analog signal output that corresponds to the sensed *refrigerant* gas concentration.

[. . .]

Section 7.2

The *effective dispersal volume* used to calculate compliance with the *EDVC* is based on the volume into which *refrigerant* is expected to disperse in the event of a *refrigerant* leak. Section 7.2, "Volume Calculations," describes how to select the appropriate spaces to be included when determining the dispersal volume, either individual or *connected spaces*, and the smallest space where *refrigerant* from a single leak event might concentrate establishes the *EDVC* that is used in Section 7.3, "*Refrigerant* System Charge Limits."

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.

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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.

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8/22