BSR/ASHRAE Addendum g
to ANSI/ASHRAE Standard 15.2-2024

First Public Review Draft

Proposed Addendum g to Standard 15.2-2024, Safety Standard for Refrigeration Systems in Residential Applications

First Public Review (July 2025)
(Draft shows Proposed Changes to Current Standard)

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FOREWORD

This proposed Addendum revises ANSI/ASHRAE Standard 15.2-2024 to incorporate elevation adjustment values for the maximum refrigerant charge for an identified dispersal volume. The current standard does not address elevation adjustment, which means calculated maximum refrigerant charge will remain the same at sea level and at 10,000 ft above sea level. This addendum introduces elevation adjustment by providing a table that can be used to determine adjustment factor based on building ground level elevation. This adjustment factor is then incorporated into existing equations within Clause 9.5.1 and Clause 9.5.2.

Note: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard 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 g to Standard 15.2-2024

Modify Section 9 as follows. The remainder of Section 9 remains unchanged.

9. REFRIGERANT CHARGE LIMITS

[…]

9.5* Maximum Allowable Refrigerant Charge. The *maximum refrigerant charge* (m_{max}) allowed for the *dispersal volume* identified using Section 9.4 *shall* be determined as follows. The *circulation* and *ventilation* operations in Sections 9.5.1 and 9.5.2 *shall* be continuous or initiated by a *leak detection system*.

9.5.1 For A2L *refrigeration systems* without *ventilation*,

$$m_{max} = C \times M \times AF \quad (9\text{-}1)$$

where

C = *LFL* conversion factor as given in Table 9-2 or by Equation 9-3 (for *refrigerant designations* not given in Table 9-2)

M = allowable *refrigerant* amount in a *dispersal volume* as given in Table 9-3 in lb_m (kg)

AF = Adjustment Factor for elevation as given in Table 9-x; elevation (h) shall be as the highest part of the surface of the ground next to the building in which the refrigeration system is installed, relative to mean sea level. Where elevation is measured in feet, it is rounded to the nearest multiple of 100 ft. Where elevation is measured in meters, it is rounded to the nearest multiple of 50 m.

Compliance with this section shall not be achieved by reducing the equipment refrigerant charge to less than that shown in the manufacturer's installation instructions.

9.5.2 For A2L *refrigeration systems* with *ventilation*,

$$m_{max} = C \times (M + MV) \times AF \quad (9\text{-}2)$$

where

C = *LFL* conversion factor as given in Table 9-2 or by Equation 9-3 (for *refrigerant designations* not given in Table 9-2)

M = allowable *refrigerant* amount in a *dispersal volume* as given in Table 9-3 in lb_m (kg)
MV = additional *refrigerant* mass allowed in a *dispersal volume* based on dilution using *ventilation* as given in Table 9-4 in lb_m (kg)
AF = Adjustment Factor for elevation as given in Table 9-x; elevation (h) shall be as the highest part of the surface of the ground next to the building in which the refrigeration system is installed, relative to mean sea level. Where elevation is measured in feet, it is rounded to the nearest multiple of 100 ft. Where elevation is measured in meters, it is rounded to the nearest multiple of 50 m.

$$C = \left(\frac{LFL}{LFL_{R-32}}\right)^{1.25} \quad (9\text{-}3)$$

where
LFL = *lower flammability limit,* lb/1000 ft^3 (g/m^3)
$LFL_{R\text{-}32}$ = *lower flammability limit* of R-32, lb/1000 ft^3 (g/m^3)

Compliance with this section shall not be achieved by reducing the equipment refrigerant charge to less than that shown in the manufacturer's installation instructions.

Table 9-x Elevation Adjustment Factor

Elevation[a]		Adjustment Factor AF
ft	m	
h ≤ 2000	h ≤ 610	1.00
2000 < h ≤ 4000	610 < h ≤ 1220	0.90
4000 < h ≤ 6000	1220 < h ≤ 1830	0.86
6000 < h ≤ 8000	1830 < h ≤ 2440	0.81
8000 < h ≤ 10000	2440 < h ≤ 3050	0.76
10000 < h ≤ 12000	3050 < h ≤ 3660	0.71
12000 < h ≤ 14000	3660 < h ≤ 4265	0.66
h >14000	h > 4265	0.61

[a]Elevation above mean sea level