NEW YORK CITY DEPARTMENT OF BUILDINGS

NOTICE OF ADOPTION OF RULE

NOTICE IS HEREBY GIVEN, pursuant to the authority vested in the Commissioner of Buildings by Section 643 of the New York City Charter and in accordance with Section 1043 of the Charter, that the Department of Buildings hereby adopts the addition of new rules regarding refrigerants. This rule was first published on December 3, 2025, and a public hearing thereon was held on January 5, 2026.

Dated: 4/7/26
New York, New York

Ahmed Tigani
Commissioner

STATEMENT OF BASIS AND PURPOSE OF RULE

Local Law 77 of 2023 (LL77), which became effective on June 10, 2023, amended provisions of the New York City Mechanical Code (MC) relating to refrigeration, among other changes. The changes related to refrigeration were specifically about provisions to regulate the use of A2L refrigerants, where some of those refrigerants comply with phase 1 of the NYS HFC Law Part 494.1.4 (2), also known as the New York Climate Leadership and Community Protection Act.

A2L refrigerants are a class of mildly flammable, lower toxicity refrigerants that serve as lower global warming potential (GWP) alternatives to traditional hydrofluorocarbons (HFCs) like R-410A in accordance with American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 34[1]. They are primarily used in air conditioning systems, where they cycle between liquid and gas states to absorb indoor heat and release it outdoors, improving energy efficiency in residential and commercial HVAC setups. In commercial refrigeration, A2L refrigerants help maintain cold temperatures for food storage, display cases, and other systems, while reducing environmental impact.

The LL77 modifications codify applicable requirements for the use of such refrigerants by:

- Modifying 1102.2 Refrigerant to include A2Ls.
- Modifying Table 1103.1 to add footnote c to require that all refrigerating systems utilizing refrigerants classified into safety group "A2L" follow the rules of the department.
- Modifying 1104.3.1 Air-conditioning for human comfort deleted group A2, allowing such refrigerant to be used in high probability air conditioning system for human comforts, with some exceptions. High-probability systems are those in which the basic design or location of components is such that leaked refrigerant from a failed connection, seal, or component has a high probability of entering an occupied space.
- Modifying Section 1106.4 Flammable refrigerants, which requires Group A2L refrigerants used in systems inside machinery rooms comply with ASHRAE 15-2022[2], in lieu of requiring such machinery room conform to Class 1, Division 2, hazardous location classification requirements of the New York City Electrical Code.
- Adopting ASHRAE 15-2022 and ASHRAE 34-2022 in Chapter 15.

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[1] ASHRAE 34 establishes a means of referring to common refrigerants using a numeric and lettering system instead of more complicated chemical names, common names, or trade names. It establishes a uniform system for assigning reference numbers, safety classifications, and refrigerant concentration limits.

[2] ASHRAE 15 specifies safe design, construction, installation, and operation of refrigeration systems.

This rule takes into consideration the flammability potential of these refrigerants and requires an alarm for when exposure to certain refrigerant concentrations occurs, which would create an unsafe environment in machinery rooms.

The Department is adding four new sections to chapter 7000 of Title 1 of the Rules of the City of New York to reflect these changes. Specifically, the rule adds the following:

- 7011-01 incorporates specific design, installation, construction, alteration and repair requirements for refrigeration systems that use refrigerants classified into safety group "A2L" by the 2022 edition of American Society of Heating, Refrigerating and Air-Conditioning Engineers ("ASHRAE") 34 - Designation and Safety Classification of Refrigerants. This section also includes requirements for a refrigerant detector that triggers an FDNY alarm when refrigerant concentration in the air exceeds safety levels.
- 7015-02 adopts and amends the 2022 edition of ASHRAE 15 Safety Standard for Refrigeration Systems as it pertains to the installation of refrigerating systems utilizing refrigerants classified into safety group "A2L" in residential applications.
- 7015-03 adopts and amends the 2022 edition of ASHRAE 15.2 - Safety Standard for Refrigeration Systems in Residential Applications and certain addenda and modifies it with regard to the installation of refrigerating systems that use refrigerants classified into safety group "A2L" in residential applications.
- 7015-04 adopts Addenda a, d, e, f, i, n, o, r, s, v, w and al of the 2022 edition of ASHRAE 34 Designation and Safety Classification of refrigerants.

The proposed rules were published in the City Record on December 3, 2025. A hearing was held on January 5, 2026. Twenty-two people submitted comments to the Department. After considering the comments, the Department made the following changes to the rule:

- Added text to clarify that §7011-01 will only apply to systems installed after the effective date of this rule.
- Removed the requirement from the proposed rule for a nameplate for each refrigerating system that contained a refrigerant circuit to include the horsepower of each compressor and the total quantity of refrigerant. The requirement for horsepower is already located in section 1101.11(2) of the MC and it does not need to be repeated here. Additionally, ASHRAE 15 of 2022 section 10.1 states that a legible permanent sign must contain the "Total quantity of refrigerant, inclusive of the quantity of refrigerant in all connected piping and equipment".
- Amended the exception language in §7011-01 (h)(3) and (h)(5) to remove the language that states A2L lines must run in 2-hour-rated conduit / enclosures and be gas tight. New language requires refrigerant piping to be enclosed in pipe-in-pipe construction and be further enclosed in construction having a 2-hour fire-resistance rating.
- Removed references to ASHRAE 15 sections 9.13 and 9.14 in the exception in §7011-01 (h)(3) and (h)(5).

- §7011-01 (h)(4)(ii) and (iii) were amended to more closely align with ASHRAE 15.
- Changed the reference in §7011-01 (h)(5) from ASHRAE 15 section 9.12.2 to the more general ASHRAE 15 section 9.12.
- Adopted Addenda a, b, c, d, f, g and h of the 2022 edition of ASHRAE 15.2.
- Clarified the application for the 2022 edition of ASHRAE Standard 15.2 where a residential refrigeration system utilizing A2L refrigerants exceeds the charge limits or other applicability criteria of ASHRAE 15.2.
- Adopted Addenda a, d, e, f, i, n, o, r, s, v, w and al of the 2022 edition of ASHRAE 34.

Comments were received for which changes were not made for the following reasons:

- Comments were received asking for the adoption of the 2024 Editions of specific ASHRAE Standards. With the MC referencing the 2022 editions of ASHRAE 15 and ASHRAE 34, the Department does not plan on adopting the 2024 Editions of ASHRAE Standards at this time, especially as they would cause conflicts with MC requirements. In lieu of adopting the 2024 Editions of ASHRAE Standards, the Department is adopting certain addenda to the 2022 edition of ASHRAE Standard 15.2 and Standard 34.
- A Comment was received stating that reference should be made in §7011-01 (d)(2) to Section 7.6.1.1 of the 2022 edition of ASHRAE 15 for when an integral refrigerant detection system is required. The Department does not believe the reference is necessary as the Department is following the 2022 edition of ASHRAE and Section 7.6.1.1 must be complied with already.
- A comment was received requesting that the Department to clarify and specify the occupancies in regard to section 7015-02. The 2022 edition of ASHRAE 15 is applicable to R-1 and R-2 occupancies. Thus, section 7015-02 is applicable to R-1 and R-2 occupancies.
    - Another comment was received that if ASHRAE 15 is made applicable to R-2 occupancies by local rule and ASHRAE 15.2 is excluded, then it would be an additional financial hardship to comply with these requirements especially for packaged systems. The Department disagrees with this assertion. ASHRAE 15 is applicable to multifamily buildings. It is entirely possible to comply using unitary systems or central hydronic systems without needing to invest in field provided detection systems.
- Comments were received questioning the use of ASHRAE 15 section 7.6.1.2 when a space only has recirculating air conditioning unit(s), with no adjoining spaces and with no outside air introduced by ductwork. See §7011-01 (f)(2). The rule goes beyond the ASHRAE safety requirement, to ensure that in case of a refrigerant leak, the lower flammability limit will never reach 100% because there will be continuous makeup air from adjoining space or outside air intake.

- A comment was received requesting the regulation of A2, A3, B2L, B2, and B3 refrigerants. In this rule, the Department is addressing footnote c of Table 1103.1 of the MC, which requires rulemaking regarding only refrigerants in safety group A2L.
- A comment was received regarding §7011-01(g)(3) suggesting a requirement of circulation and ventilation within the machinery room to prevent a flammable cloud from developing and removing the current requirement regarding refrigerant compressors. The current rule requirements come directly from the 2022 edition of ASHRAE 15 section 8.11.6.2. The Department believes stopping the refrigerant compressor and refrigerant pump is important to control the refrigerant leak and should remain as a requirement.

The Department of Buildings' authority for these rules is found in sections 643 and 1043 of the New York City Charter and section 1103.1 of the New York City Mechanical Code.

New material is underlined.
[Deleted material is in brackets.]
Asterisks (***) indicate unamended text.

"Shall" and "must" denote mandatory requirements and may be used interchangeably in the rules of this department, unless otherwise specified or unless the context clearly indicates otherwise.

Section 1. Chapter 7000 of Title 1 of the Rules of the City of New York is amended by adding a new Section 7011-01 to read as follows:

§7011-01 A2L Refrigerating Systems.

(a) **Scope.** Pursuant to footnote c of Table 1103.1 of the New York City Mechanical Code (MC), all refrigerating systems utilizing refrigerants classified into safety group "A2L" by the 2022 edition of American Society of Heating, Refrigerating and Air-Conditioning Engineers ("ASHRAE") 34 installed after the effective date of this rule must comply with the requirements of this section.

(b) **References.** See MC Sections 102.4, 1101.6, 1101.8, 1101.11, 1102.2, 1104.2, 1105.3, 1105.7, 1105.8, 1105.9, 1105.11 and 1108.1

(c) **General.**

(1) **Applicability.** Group A2L refrigerating systems must conform to the specific provisions of the 2022 edition of ASHRAE 15 as adopted and modified by Section 7015-02. ASHRAE 15 provisions apply pursuant to Section MC

102.8. Except otherwise stated, ASHRAE 15 does not apply to residential refrigeration systems complying with ASHRAE 15.2 as modified by 7015-03.

(2) **Changing refrigerant.** Refer to ASHRAE 15 Section 5.3.

(3) **Signs, nameplates, and operation and emergency shut-down instructions.** Signs and identification for Group A2L refrigerant must comply with ASHRAE 15 Section 10.1. Emergency shutdown procedures, including instructions, must comply with ASHRAE 15 Section 10.6. Nameplates must comply with ASHRAE 15 Section 9.17.

(d) **System requirements.**

(1) **Refrigerants.** Refrigerants having a Safety Group Classification of A2L not identified in MC Table 1103.1, but listed in ASHRAE 34 Table 4-1 and 4-2, are not required to be approved by the department before use.

(2) **Refrigerant Detection System Requirements**. When required by Section 7.6.2.3 of ASHRAE 15 for refrigeration systems for human comfort applications or Section 7.7.3.3 of ASHRAE 15 for refrigeration systems other than human comfort applications, refrigeration systems having refrigerants in Safety Group Classification A2L must have an integral refrigerant detection system. Such refrigerant detection systems must comply with Section 7.6.2.4 of ASHRAE 15.

(3) **Mitigation Action Requirements**. Mitigation actions must be provided in accordance with section 7.6.2.5 of ASHRAE 15.

(4) **Release Mitigation Controls.** Release mitigation controls may be used to reduce the releasable charge in accordance with 7.3.4 and 7.6 of ASHRAE 15 such that the Mitigation Releasable Refrigerant Charge (Mrel) as calculated in 7.3.4.3 is less than or equal to the Effective Dispersal Volume Charge (EDVC) calculated in 7.6.

(e) **Refrigeration system classification.** Refrigerants in safety group "A2L" must be classified in ASHRAE 34, Table 4-1 and 4-2.

(f) **System application requirements.**

(1) **Refrigerant restrictions.** The use of the term "natural ventilation" in Section 7 of ASHRAE 15 is not construed to require outside air.

(2) **Allowable refrigerant charges for human comfort.** Allowable refrigerant charge volumes for high-probability direct systems utilizing A2L refrigerants must be calculated in accordance with ASHRAE 15, Section 7.6. For a space having only recirculating air conditioning unit(s), with no adjoining spaces and with no outside air introduced by ductwork, ASHRAE 15 section

7.6.1.2 must be used to calculate the maximum refrigerant charge of such unit's independent circuit in conjunction with the definition of "Air Circulation" in section 7015-02 of these rules.

(3) Allowable refrigerant charges for other than human comfort. Allowable refrigerant charge volumes for high-probability direct systems utilizing A2L refrigerants must be calculated in accordance with ASHRAE 15 Section 7.7.

(g) Machinery room.

(1) Machinery room. Where refrigerants in safety group A2L are used in machinery rooms, such machinery rooms must be designed to comply with the applicable requirements of Section 8.9 and 8.11 of ASHRAE 15.

(2) Emergency pressure control system. Permanently installed refrigeration systems containing more than 6.6 pounds (3 kg) of A2L refrigerant are not required to be provided with an emergency pressure control system.

(3) Refrigerant detector. When refrigerants in safety group A2L are used, the machinery room must be provided with a refrigerant detection system in accordance with Section 8.11 of ASHRAE 15 and the following:

(i) An emergency alarm "FDNY Alarm" must generate an output signal in no more than 30 seconds when exposed to a refrigerant concentration exceeding 25% of the lower flammability limit (LFL) or when it reaches the upper detection limit of the refrigerant detector, whichever is lower, start level 2 ventilation in accordance with ASHRAE 15, and automatically de-energize the following equipment in the machinery room:

(A) Refrigerant compressors,
(B) Refrigerant pumps,
(C) Normally closed automatic refrigerant valves,
(D) Other unclassified electrical sources of ignition with apparent power rating greater than 1 kVA, where the apparent power is the product of the circuit voltage and current rating.

(ii) A trouble Alarm "FDNY Fault" must generate an output signal when the detection of refrigerant concentration reaches a concentration equal to the occupational exposure limit (OEL) value for such

refrigerant as published in ASHRAE 34 and start level 1 ventilation in accordance with ASHRAE 15.

(iii) A supervisory alarm "FDNY Supervisory" must generate an output signal when the detector identifies a malfunctioning component within the system that needs immediate attention.

(iv) The set points for "trouble alarm" and "emergency alarm" must be in accordance with Table 8-1 of ASHRAE 15.

(v) All alarms must annunciate at both a refrigerant detection panel inside the machinery room and at an annunciator panel located outside the machinery room. The annunciator panel located outside the machinery room must display the same information in the panel located inside the machinery room and be installed within 10 feet of the machinery room entrance door, on the premises.

(vi) When refrigerant detectors are installed in buildings without fire alarm systems, such refrigerant detection system must be monitored at a continuously attended location, on the premises, by a person holding a Certificate of Fitness issued by the New York City Fire Department ("FDNY") or by an FDNY approved central supervising station with refrigerant detection alarm, supervisory, and trouble signals being transmitted as separate and distinct signals to such FDNY approved central station.

(vii) When refrigerant detectors are installed in buildings with fire alarm systems, such refrigerant detector system may be used in multi-hazard applications.

(viii) When refrigerant detectors are installed in buildings with a building-wide fire alarm system, the refrigerant detector control panel must be monitored by such building-wide fire alarm system and the following signals must be transmitted to the building-wide fire alarm control panel (fire command center or station):

(A) Emergency Alarm "FDNY Alarm"
(B) Supervisory signal "FDNY Supervisory"

(C) Trouble Alarm "FDNY Fault"

Each alarm input to the control unit, whether emergency, supervisory or trouble alarm, must be transmitted to the building-wide fire alarm control panel (fire command center or station) at a discrete point, if the building-wide fire alarm system is capable, and the location of an operated initiating device must be visibly indicated by floor, fire zone, or other approved subdivision.

(ix) Where a building is provided with emergency power, refrigerant detection systems must be connected to such emergency power. Where a building is not otherwise provided with emergency power, the power source for emergency power to a refrigerant detection system must be served by an uninterruptable power source (UPS).

(h) Refrigerant piping safety for all group A2L refrigerating systems. Where refrigerant piping penetrates floors, ceilings, or roofs pursuant to Section 1107.2.3 of the NYC Mechanical Code, it must comply with the requirements of paragraphs (1) through (5) of this subdivision.

(1) Refrigerant piping systems, including but not limited to stop valve, and piping identification must comply with the requirements of ASHRAE 15 section 9.12.

(2) Refrigerant quantity limits must comply with the requirements of ASHRAE 15 section 7.6 or 7.7.

(3) Effective dispersal volume (EDV) calculations for rooms not connected to other spaces must comply with section 7.2.3.1 of ASHRAE 15 and must be performed for all spaces other than shafts through which refrigerant piping passes, regardless of whether such space is served by the system.

Exception: Rooms not connected to other spaces are exempt from EDV calculation in accordance with section 7.2.3.1 if such refrigerant piping and fittings are enclosed in an outer sleeve consisting of piping of the same material. The outer sleeve must be able to hold the design working pressure of the system. Press-fit couplings may be used. In addition to the outer containment piping, refrigerant piping must be further enclosed in construction having a 2-hour fire-resistance rating.

(4) EDVC calculation in **connected spaces**.

(i) Where spaces are connected via natural ventilation, the size of the opening and EDVC must be calculated in accordance with ASHRAE 15 section 7.2.3.2

(ii) Where spaces are connected via ducted air distribution system, the EDVC must be calculated in accordance with ASHRAE 15 section 7.2.3.3

(iii) Where spaces are connected via mechanical ventilation, the EDVC must be calculated in accordance with ASHRAE 15 section 7.2.3.4

(5) **Location**. Refrigerant piping for Group A2L refrigerants must comply with the location requirements of Section 9.12 of ASHRAE 15.

Exception: Refrigerant piping for Group A2L refrigerant may be installed in public corridors if such refrigerant piping and fittings are enclosed in an outer sleeve consisting of piping of the same material. The outer sleeve must be able to hold the design working pressure of the system. Press-fit couplings may be used. In addition to the outer containment piping, refrigerant piping must be further enclosed in construction having a 2-hour fire-resistance rating.

(i) Testing and inspection.

(1) Testing of refrigerating system and its components must be performed in accordance with ASHRAE 15 section 9.13 and 9.14. Such test must be witnessed by a special inspector.

(2) Special inspections must be conducted in accordance with 2022 NYC Building Code 1705.21.

§2. Chapter 7015 of Title 1 of the Rules of the City of New York is amended by adding a new section 7015-02 to read as follows:

§7015-02 American Society of Heating, Refrigerating and Air-Conditioning Engineers ("ASHRAE") 15 amendment relating to the installation of refrigerating systems utilizing refrigerants classified into safety group "A2L."

Pursuant to Section 28-103.19 of the New York City Administrative Code, the Department of Buildings adopts the 2022 edition of the American Society of Heating, Refrigerating and Air-Conditioning Engineers ("ASHRAE") 15 Safety Standard for Refrigeration Systems as it pertains to the installation of refrigerating systems utilizing refrigerants classified into safety group "A2L" in residential applications and amends it to read as follows:

Delete and replace the definitions in Section 3.1 of air circulation and safety shutoff valve, as follows:

Air circulation: mechanically inducing airflow within spaces connected by air ducts.

Safety shutoff valve: an automatically controlled refrigerant valve for the purpose of limiting the amount of refrigerant released into a space when a refrigerant leak is detected. Valves must be designed to close in an event of an electric power failure.

Revise Section 7.2.3.4 to read as follows:

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 must be included in the effective dispersal volume used to calculate the EDVC.

Revise Section 7.6.2.4 (g) to read as follows:

g. Generate an output signal in not more than 30 seconds when exposed to a refrigerant concentration at or exceeding 25% of the LFL (+0%, –1%).

§3. Chapter 7015 of Title 1 of the Rules of the City of New York is amended by adding a new section 7015-03, to read as follows:

§7015-03 American Society of Heating, Refrigerating and Air-Conditioning Engineers ("ASHRAE") 15.2 amendment relating to the installation of refrigerating systems utilizing refrigerants classified into safety group "A2L" in residential applications.

Pursuant to Section 28-103.19 of the New York City Administrative Code, the Department of Buildings adopts the 2022 edition of the American Society of Heating, Refrigerating and Air-Conditioning Engineers ("ASHRAE") 15.2 Standard and Addenda a, b, c, d, f, g and h of the 2022 edition of ASHRAE 15.2 Safety Standard for Refrigeration Systems in Residential Applications as it pertains to the installation of refrigerating systems utilizing

refrigerants classified into safety group "A2L" in residential applications and amends it as follows:

Revise Section 2.1 to read as follows:

2.1 This standard applies to listed refrigeration systems in one- and two-family dwellings in group R3 buildings that are limited to serving only a single dwelling unit or sleeping unit. Where a residential refrigeration system utilizing A2L refrigerants exceeds the charge limits or other applicability criteria of ASHRAE 15.2, the system must comply with ASHRAE 15.

Delete paragraphs a, b, and c and replace with the following: DELETED.

§4. Chapter 7015 of Title 1 of the Rules of the City of New York is amended by adding a new section 7015-04, to read as follows:

§7015-04 American Society of Heating, Refrigerating and Air-Conditioning Engineers ("ASHRAE") 34 Addenda amendment relating to the Designation and Safety Classification of refrigerants.

Pursuant to Section 28-103.19 of the New York City Administrative Code, the Department of Buildings adopts the 2022 edition of Addenda a, d, e, f, i, n, o, r, s, v, w and al of the American Society of Heating, Refrigerating and Air-Conditioning Engineers ("ASHRAE") 34 as it pertains to the Designation and Safety Classification of refrigerants.