ORDINANCE NO. 2026-3

AN ORDINANCE AMENDING "THE CODE OF THE VILLAGE OF SOUTH HOLLAND, ILLINOIS," ADOPTED DECEMBER 7, 1987, CHAPTER 6, ENTITLED "BUILDINGS AND BUILDING REGULATIONS"

WHEREAS, the Village of South Holland is Home Rule Municipality within the purview of Article VII, Section 6(a) of the Illinois Constitution (1970), and the said Village, therefore, may exercise any power and perform any function pertaining to its government and affairs.

NOW, THEREFORE, BE IT ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Article II., "Building Code", is hereby amended as follows:

SECTION 1: That Division 1., Generally, Sec. 6-16, entitled "Adoption of building code", is hereby deleted in its entirety and the following is inserted in lieu thereof:

Sec. 6-16. Adoption of building codes.

A certain document, three (3) copies of which are on file in the office of the village clerk of the Village of South Holland being marked and designated as the International Building Code (2021) be and is hereby adopted as the building code of the Village of South Holland in the State of Illinois. The following codes as adopted herein shall include the following:

International Building Code: Appendixes E, F, G, H, I, J (2021);

International Residential Code: Appendixes E, F, G, H, J, K, M, O, T (2021);

International Mechanical Code: Appendix A (2021);

International Fuel Gas Code: Appendixes A, B, C, D (2021);

International Wildland-Urban Interface Code (2021);

International Property Maintenance Code: Appendix A (2021);

International Existing Building Code (2021);

International Private Sewage Disposal Code: Appendixes A, B (2021);

International Fire Code: Appendixes A, B, C, D, E, F, G, H, I, J, K, L, M, N (2021);

International Swimming Pool and Spa Code: Appendixes A, B, C, D, E, F, G, H, I, J, K, L, M, N (2021);

National Electric Code (2023);

International Energy Conservation Code (current edition as adopted by the State of Illinois)

Illinois State Plumbing Code (current edition as adopted by the State of Illinois)

Each and all of the regulations, provisions, penalties, conditions and terms of said codes are hereby referred to, adopted and made a part hereof as if fully set out in this section.

SECTION 2: That Division 1., Generally, Sec. 6-23, entitled "Reserved", is hereby deleted in its entirety and the following is inserted in lieu thereof:

Sec. 6-23. International Building Code Amendments.

There is hereby adopted by the Village the 2021 International Building Code, as hereinafter amended.

Passim. Wherever the phrase "[name of jurisdiction]" or the word "jurisdiction" appears, it shall be deemed to refer to the Village of South Holland.

Passim. Wherever the phrase "code official" or "department of building inspection" appears, it shall be deemed to refer to the Village of South Holland.

SECTION 3: That Section 202 is amended to revise the following definition in its entirety to read as:

Flammable Gas. A material that is gas at 68°F (20°C) or less at 14.7 pounds per square inch atmosphere (psia) (101 kPa) of pressure [a material that has a boiling point of 68°F (20°C) or less at 14.7 psia (101 kPa)] subdivided as follows:

1. Category 1A. A gas that meets either of the following:

1.1. Ignitable at 14.7 psia (101 kPA) when in a mixture of 13 percent or less by volume with air.

1.2. A flammable range at 14.7 psia (101 kPa) with air of at least 12 percent, regardless of the lower limit, unless data shows compliance with Category 1B.

2. Category 1B. A gas that meets the flammability criteria for Category lA, is not pyrophoric or chemically unstable, and meets one or more of the following:

2.1. A lower flammability limit of more than 6 percent by volume of air.

2.2. A fundamental burning velocity of less than 3.9 inches/second (99 mm/s).

The limits specified shall be determined at 14.7 psi (101 kPa) of pressure and a temperature of 68°F (20°C) in accordance with ASTM E681.

Where not otherwise specified, the term "flammable gas" includes both Category 1A and 1B.

SECTION 4: That Table 307.1(1) is amended to include the following:

See Exhibit "A" attached hereto

SECTION 5: That Section 3.07.4 is amended to revise the following definition in its entirety to read as follows:

307.4 High-hazard Group H-2. Buildings and structures containing materials that pose a deflagration hazard or a hazard from accelerated burning shall be classified s Group H-2. Such materials shall include, but not be limited to, the following:

Class I, II or IIIA flammable or combustible liquids that are used or stored in normally open containers or systems, or in closed containers or systems pressurized at more than 15 pounds per square inch gauge (103.4 kPa).

Combustible dusts where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3.

Cryogenic fluids, flammable.

Category 1A flammable gases.

Category 1B flammable gases having a burning velocity greater than 3.9 inches per second (10 cm/s).

Organic peroxides, Class I.

Oxiders, Class 3, that are used or stored in normally open containers or systems, or in closed containers or systems pressurized a more than 15 pounds per square inch gauge (103 kPa).

Pyrophoric liquids, solids and gases, nondetonable.

Unstable (reactive) materials, Class 3, nondetonable.

Water-reactive materials, Class 3.

SECTION 6: That Section 3.07.5 is amended to revise the following definition in its entirety to read as follows:

307.5 High-hazard Group H-3. Buildings and structures containing materials that readily support combustion or that pose a physical hazard shall be classified as Group H-3. Such materials shall include, but not be limited to, the following:

Class I, II or IIIA flammable or combustible liquids that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103.4 kPa) or less.

Combustible fibers, other than densely packed baled cotton, where manufactured, generated or used in such a manner that the concentration and conditions create fire or explosion hazard on information prepared in accordance with Section 414.1.3.

Consumer fireworks, 1.4G (Class C, Common)

Cryogenic fluids, oxidizing

Category 18 flammable gases have a burning velocity of 3.9 inches per second (10 cm/s) or less

Flammable solids

Organic peroxides, Class II and III

Oxiders, Class 2

Oxiders, Class 3, that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103 kPA) or less

Oxidizing gases

Unstable (reactive) materials, Class 2

Water-reactive materials, Class 2

SECTION 7: That Section 414.2,5 is amended to revise the following definition in its entirety to read as follows:

414.2.5 Hazardous material in Group M display and storage areas and in Group S storage areas. Hazardous materials located in Group M and Group S occupancies shall be in accordance with Section 414.2.5.1 through 414.2.5.4.

SECTION 8: That Section 414.2.5.4 is amended to revise the following definition in its entirety to read as follows:

414.2.5.4 Flammable gas. The aggregate quantity of Category 18 flammable gas having a burning velocity of 3.9 inches per second (10 cm/s) or less stored and displayed within a single control area of a Group M occupancy or stored in a single control area of a Group S occupancy is allowed to exceed the maximum allowable quantities per control area specified in Table 307.1(1) without classifying the building or use as a Group H occupancy, provided that the materials are stored and displayed in accordance with the International Fire Code and quantities do not exceed the amounts specified in Table 414.2.5.4.

SECTION 9: That Table 414.2.5(3) shall be amended to include the following:

TABLE 414.2.5(3) MAXIMUM ALLOWABLE QUANTITY OF LOW BURNING VELOCITY CATEGORY 18 FLAMMABLE GAS IN GROUP M AND S OCCUPANCIES PER CONTROL AREA*

FLAMMABLE GAS CATEGORY	MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA	
	Sprinklered in Accordance with Note b	Nonsprinklered

Category 1B (Low BV)		
Gaseous	390,000 cu. ft.	195,000 cu. ft.
Liquified	40,000 lbs.	20,000 lbs.

For St, 1 pound = 0.454 kg. 1 cubic foot = 00.2832 m3. 1 square foot = 0.093m2. 1 inch/second = 2.5641 cm/s.

a. Control areas shall be separated from each other by nor less than 1-hour fire barrier
b. The building shall be equipped throughout with an approved automatic sprinkler system with minimum sprinkler design density of Ordinary Hazard Group 2 in the area where flammable gases are stored or displayed.
c. Where storage areas exceed 50,000 square feet in area, the maximum allowable quantities area allowed to be increased by 2 percent for each 1,000 square feet of area in excess of 50,000 square feet, up to not more than 100 percent of the table amounts. Separation of control areas is not required. The aggregate amount shall not exceed 80,000 pounds.
d. "Low BV" Category 1B flammable gas has a burning velocity of 3.9 in/s (10 cm/s) or less.

SECTION 10: That Table 414.5.1 shall be amended to include the following:

TABLE 414.5.1 EXPLOSION CONTROL REQUIREMENTS

MATERIAL	CLASS	EXPLOSION CONTROL METHODS: Barricade construction	EXPLOSION CONTROL METHODS: Explosion (deflagration) venting or explosion (deflagration prevention systems
		HAZARD CATEGORY	
Combustible dusts	-----	Not Required	Required
Cryogenic flammables	-----	Not required	Required

MATERIAL	CLASS	EXPLOSION CONTROL METHODS: Barricade construction	EXPLOSION CONTROL METHODS: Explosion (deflagration) venting or explosion (deflagration prevention systems
		HAZARD CATEGORY	
Explosives	Division 1.1	Required	Not Required
	Division 1.2	Required	Not Required
	Division 1.3	Not Required	Required
	Division 1.4	Not Required	Required
	Division 1.5	Required	Not Required
	Division 1.6	Required	Not Required
Flammable gas	Gaseous	Not Required	Required
	Liquified	Not Required	Required

Flammable liquid	1A	Not Required	Required
	1B	Not Required	Required
Organic peroxides	U	Required	Not Permitted
	1	Required	Not Permitted
Oxidizer liquids and solids	4	Required	Not Permitted
Pyrophoric gas	-----	Not Required	Required
Unstable (reactive)	4	Required	Not Permitted
	3 (Detonable)	Required	Not Permitted
	3 (Nondetonable)	Not Required	Required
Water-reactive liquids and solids	3	Not Required	Required
	2	Not Required	Required

SPECIAL USES

Acetylene generator rooms	-----	Not Required	Required
Electrochemical energy storage system	-----	Not Required	Required
Energy storage system	-----	Not Required	Required
Grain processing	-----	Not Required	Required
Liquified petroleum gas distribution facilities	-----	Not Required	Required
Where explosion hazards exist	Detonation	Required	Not Permitted
	Deflagration	Not Required	Required

a. See Section 414.1.3.
b. See the International Fire Code.
c. Combustible dusts where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 104.2.2 of the International Fire Code. See definition of "Combustible dust" in Chapter 2.
d. Storage or use.
e. In open use or dispensing.
f. Rooms containing dispensing and use of hazardous materials where an explosive environment can occur because of the characteristics or nature of the hazardous materials or as a result of the dispensing or use process.
g. A method of explosion control shall be provided where Class 2 water-reactive materials can form potentially explosive mixtures.
h. Explosion venting is not required for Group H-5 fabrication areas complying with Section 415.11.1 and the International Fire Code.
I. Where explosion control is required in Section 1207 of the International Fire Code.
j. Does not apply to consumer fireworks, Division 1.4G.
k. Not required for Category 1B Flammable Gases having a burning velocity not exceeding 3.9 inches per second (10 cm/s).

SECTION 11: That Section 907.1 shall be amended to read as follows:

907.1 General. This section covers the application, installation, performance and maintenance of fire alarm systems and their components. In addition to the requirements of Section 907, installations shall comply with the Illinois Smoke Detector Act (425 ILCS 60/).

SECTION 12: That Section 907.2.8. shall be amended to read as follows:

907.2.8 Group R-1. Fire alarm systems and smoke alarms shall be installed in Group R-1 occupancies as required in Sections 907.2.8.1 through 907.2.8.3 and the Illinois Smoke Detector Act (425 ILCS 60/).

SECTION 13: That Section 907.2.9 shall be amended to read as follows:

907.2.9 Group R-2. Fire alarm systems and smoke alarms shall be installed in Group R-2 occupancies as required in Sections 907.2.9.1 through 907.2.9.3 and the Illinois Smoke Detector Act (425 ILCS 60/).

SECTION 14: That Section 907.2.11 shall be amended to read as follows:

907.2.11 Single- and multiple-station smoke alarms. Listed single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with Sections 907.2.11.1 through907.2.11.7, NFPA 72, the manufacturer's instructions, and the Illinois Smoke Detector Act (425 ILCS 60/).

Secs. 6-24 - 6-34. Reserved.

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Article III., "Residential Code", is hereby inserted and shall read as follows:

ARTICLE III. RESIDENTIAL CODE

There is hereby adopted by the Village the 2021 International Residential Code, as hereinafter amended.

Passim. Wherever the phrase "[name of jurisdiction]" or the word "jurisdiction" appears, it shall be deemed to refer to the Village of South Holland.

Passim. Wherever the phrase "code official" or "department of building inspection" appears, it shall be deemed to refer to the Village of South Holland.

SECTION 1: That Table R301.2 is hereby amended to read as follows:

See Exhibit "B" attached hereto

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Article III, "Electrical Code" be renumbered to Article IV., "Electrical Code", is hereby amended to read as follows:

ARTICLE IV. ELECTRICAL CODE

TABLE R301.2
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

See Exhibit "C" attached hereto

SECTION 1: That Section R314.2 is hereby amended to read as follows:

R314.2 Where required. Smoke alarms shall be provided in accordance with this section and the Illinois Smoke Detector Act (425 ILCS 60/).

SECTION 2: That Section 314.3 is hereby amended to read as follows:

R314.3 Location. Smoke alarms shall be installed in the following locations:

1. In each sleeping room.

2. Outside each separate sleeping area in the immediate vicinity of the bedrooms, but not further than 15 feet from a room used for sleeping purposes.

3. On each additional story of the dwelling, including basements and habitable attics and not including crawl spaces and uninhabitable attics. In dwelling or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

4. Not less than 3 feet 914 mm) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by this section.

5. In the hallway and in the room open to the hallway in dwelling units where the ceiling height of a room open to a hallway serving bedrooms exceeds that of the hallway by 24 inches (610 mm) or more.

6. Within the room to which a sleeping loft is open, in the immediate vicinity of the sleeping loft.

7. When installed in the ceiling, the smoke alarm shall be installed at least 6 inches from a wall, or within an approved location to capture smoke.

8. When installed in a wall, the smoke alarm shall be installed 4 to 6 inches from a ceiling, or within an approved location to capture smoke.

SECTION 3: That Section 6-67, "Electrical commission", shall be deleted in its entirety and the following shall be inserted in lieu thereof and shall read as follows:

Sec. 6-67. Reserved.

SECTION 4: That Section 6-68, "Adoption of standards" shall be deleted in its entirety and the following shall be inserted in lieu thereof and shall read as follows:

Sec. 6-68. Adoption of standards.

(a) *Generally.* The installation, alteration and use of electrical equipment in the village are governed by the standards and specifications, rules and regulations recommended by the electrical commission and adopted by the board. The fees paid for inspection shall be those recommended by the electrical commission and adopted by the board.

(b) *National Electrical Code.* The 2023 edition of the National Electrical Code, being the standard of the American Insurance Association for electric wiring and apparatus as recommended by the National Fire Protection Association, and as from time to time amended by American Standards Association, copies of which have been placed on file for more than thirty (30) days last past with the village clerk, is hereby incorporated in this article and adopted as to all matters therein covered which are not specifically covered by this article.

(c) *Electricity supply company regulations adopted. The Information and Requirements for Supply of Electrical Services* as last adopted by the Public Service Company, Division of Commonwealth Edison Company, and as last published and filed with the Illinois Commerce Commission, three (3) copies of which have been placed on file for more than thirty (30) days last past with the village clerk is hereby incorporated by reference and adopted with

respect to all matters not specifically covered by this article, or by the *National Electrical Code* as from time to time amended.

(d) *Permits*. Upon the adoption by ordinance of standards and specifications, rules, regulations and fees, and publication, according to statute, they shall become operative, and no electrical equipment shall be installed or altered except upon a permit first issued by the electrical inspection department.

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Article IV, "Mechanical Code" be renumbered to Article V., "Mechanical Code", is hereby amended to read as follows:

SECTION 1: That Section 6-111, "Adoption of mechanical code", shall be deleted in its entirety and the following shall be inserted in lieu thereof and shall read as follows:

Sec. 6-111. International Mechanical Code Amendments

There is hereby adopted by the Village the 2021 International Mechanical Code, as hereinafter amended.

Passim. Wherever the phrase "[name of jurisdiction]" or the word "jurisdiction" appears, they shall be deemed to refer to the Village of South Holland.

Passim. Wherever the phrase "code official" or "department of building inspection" appears, it shall be deemed to refer to the Village of South Holland.

SECTION 2: That Section 1101.2.1 is hereby amended to include the following section:

1101.2.1 Group A2L, A2, A3 and B1 high-probability equipment. High-probability equipment using Group A2L, A2, A3 and B1 refrigerant shall comply with UL484, UL/CSA 60335-2-40 or UL/CSA 60335-2-89.

SECTION 3: That Table 1103.1 is amended to read as follows:

TABLE 1103.1
REFRIGERANT CLASSIFICATION, AMOUNT AND OEL

See Exhibit "D" attached hereto

SECTION 4: That Section 1104.3.1 is hereby amended to read as follows:

1104.3.1 Air conditioning for human comfort. High-probability systems used for human comfort shall use Group A1 or A2L refrigerants.

Exceptions:

1. Equipment listed for and used in residential occupancies containing a maximum of 6.6 pounds (3 kg) of refrigerant.

2. Equipment listed for and used in commercial occupancies containing a maximum of 22 pounds (10 kg) of refrigerant.

3. Industrial occupancies.

SECTION 5: That Section 1104.3.2 is hereby amended to read as follows:

1104.3.2 Group A2, A3, B2 and B3 refrigerants. Group A2 and B2 refrigerants shall not be used in high-probability systems. Group A3 and B3 refrigerants shall not be used except where approved.

Exceptions: This section does not apply to:

1. Laboratories where the floor area per occupant is not less than 100 square feet (9.3 m^2).

2. Listed self-contained systems having a maximum of 0.331 (150 g) of Group A3 refrigerants.

3. Industrial occupancies.

4. Equipment listed for and used in residential occupancies containing a maximum of 6.6 pounds (3 kg) of Group A2 and B2 refrigerant.

5. Equipment listed for and used in commercial occupancies containing a maximum of 22 pounds (10 kg) of Group A2 and B2 refrigerant.

SECTION 6: That Table 1104.3.2. shall be deleted in its entirety.

SECTION 7: That Section 1106.3 is hereby amended to read as follows:

1106.3 Class 2 and 3 refrigerants. Where refrigerants of Groups A2, A3, B2 and B3 are used, the machinery room shall conform to the Class I, Division 2, hazardous location classification requirements of NFPA 70.

SECTION 8: That Section 1106.4 is hereby amended to read as follows:

1106.4 Group A2L and B2L refrigerant. Machinery rooms for Group A2L and B2L refrigerant shall comply with Section 1106.4.1 through Section 1106.4.3.

SECTION 9: That Section 1106.4.1 is hereby amended to read as follows:

1106.4.1 Elevated temperatures. Open flame-producing devices or continuously operating hot surfaces over 1290°F (700°C) shall not be permanently installed in the room.

SECTION 10: That Section 1106.4.2 is hereby amended to read as follows:

1106.4.2 Refrigerant detector. In addition to the requirements of Section 1105.3, refrigerant detector shall signal an alarm and activate the ventilation system in accordance with the response time specified in Table 1106.4.2.

SECTION 11: That Table 1106.4.2 is hereby amended to include a revised version as follows:

TABLE 1106.4.2
GROUP A2L AND B2L DETECTOR ACTIVATION

Activation Level	Maximum Response Time (seconds)	ASHRAE 15 Ventilation Level	Alarm Reset	Alarm Type
Less than or equal to the OEL in Table 1203.1	300	1	Automatic	Trouble
Less than or equal to the refrigerant concentration level in Table 1203.1	15	2	Manual	Emergency

SECTION 12: That Section 1106.4.3 is hereby amended to read as follows:

1106.4.3 Mechanical ventilation. The machinery room shall have a mechanical ventilation system complying with ASHRAE 15.

SECTION 13: That Table 1107.4 is hereby amended to include a revised version as follows:

TABLE 1107.4
REFRIGERANT PIPE

Piping Material	Standard
Aluminum tube	ASTM 8210/ASTM 8210M, ASTM 8491/8491M

Brass (copper alloy) pipe	ASTM 843
Copper linesets	ASTM 8280, ASTM 81003
Copper pipe	ASTM 842, ASTM 8302
Steel pipe	
Steel tube	

SECTION 14: That Table 1107.5 is hereby amended to include a revised version as follows:

TABLE 1107.5
REFRIGERANT PIPE FITTINGS

Fitting Material	Standard
Aluminum	ASTM 8361
Copper and Copper Alloy (Brass)	ASME 816.15, ASME 816.18, ASME 816.22, ASME 816.24, ASME 816.26m ASME 816.50
Steel	ASTM A108, ASTM A181, ASTM A193, ASTM A234, ASTM A420, ASTM A707

SECTION 15: That Section 1107.7 is hereby amended to read as follows:

1107.7 Flexible connectors, expansion and vibration compensators. Flexible connectors and expansion and vibration control devices shall be listed and labeled for use in refrigerant systems and pressures for which the components are installed.

SECTION 16: That Section 1109.2.2 is hereby amended to read as follows:

1109.2.2 Refrigerant pipe enclosure. Refrigerant piping shall be protected by locating it within the building elements or within protective enclosures.

1. Where installed without ready access or located more than 7 feet 3 inches (2210 mm) above the finished floor.

2. Where located within 6 feet (1829 mm) of the refrigerant unit or appliance.

3. Where located in a machinery room complying with Section 1105.

4. Outside the building:

    4.1 Where protected from damage from the weather, including but not limited to hail, ice and snow loads.

4.2 Where protected from damage within the expected foot or traffic path.

4.3 Where installed underground not less than 8 inches (200 mm) below finished grade and protected against corrosion.

SECTION 16: That Section 1109.2.3 is hereby amended to read as follows:

1109.2.3 Prohibited locations. Refrigerant piping shall not be installed in any of the following locations:

1. Exposed within a fire-resistance-rated exit access corridor.

2. Exposed within an interior exit stairway.

3. Within an interior exit ramp.

4. Within an exit passageway.

5. Within an elevator, dumbwaiter or other shaft containing a moving object.

SECTION 17: That Section 1109.2.6 is hereby amended to read as follows:

1109.2.6 Exposed piping surface temperature. Exposed piping having surface temperatures greater than 120°F (49°C) or less than 5°F (-15°C) with ready access to nonauthorized personnel shall be protected from contact or shall have thermal insulation that limits the exposed insulation surface temperature to a range of 5°F (-15°C) to 120°F (49°C).

SECTION 18: That Section 1109.2.7 is hereby amended tor read as follows:

1109.2.7 Pipe identification. Refrigerant pipe located in areas other than the room or space where the refrigerating equipment is located shall be identified., The pipe identification shall be located at intervals not exceeding 20 feet (6096 mm) on the refrigerant piping or pipe insulation. The minimum height of lettering of the identification label shall be ½ inch (12.7 mm). The identification shall indicate the refrigerant designation and safety group classification of refrigerant used in the piping system. For Group A2L and B2L refrigerants, the identification shall also include the following statement: "WARNING - Risk of Fire, Flammable Refrigerant." For Group A2, A3, B2 and B3 refrigerants, the identification shall also include the following statement: "DANGER - Risk of Fire or Explosion, Flammable Refrigerant." For any Group B refrigerant, the identification shall also include the following statement: "DANGER - Toxic Refrigerant."

SECTION 19: That Section 1109.3 is hereby amended to read as follows:

1109.3 Installation requirements for Group A2L, A2, A3, B2L, B2 or B3 refrigerant. Piping systems

using Group A2L, A2, A3, B2L, B2 or B3 refrigerant shall comply with the requirements of Sections 11093.1 and 1109.3.2.

SECTION 20: That Section 1109.3.1 is hereby amended to read as follows:

1109.3.1 Protection against physical damage. In addition to the requirements of Section 305.5, aluminum, copper and steel tube used for Group A2, A3, B2 and B3 refrigerants and located in concealed locations where tubing is installed in studs, joists, rafters or similar member spaces, and located less than 11/4 inches (32 mm) from the nearest edge of the member, shall be continuously protected by shield plates. Protective steel shield plates shall cover the area of the tube plus the area extending not less than 2 inches (51 mm) beyond both sides of the tube.

SECTION 21: That Section 1109.3.2 is hereby amended to read as follows:

1109.3.2 Shaft ventilation. Refrigerant pipe shafts with systems using Group 21 or B2L refrigerant shall be naturally or mechanically ventilated. Refrigerant pipe shafts with one or more systems using any Group A2, A3, B2 or B3 refrigerant shall be continuously mechanically ventilated and shall include a refrigerant detector. The shaft ventilation exhaust outlet shall comply with Section 501.3.1. Naturally ventilated shafts shall have a pipe, duct or conduit not less than 4 inches (102 mm) in diameter that connects to the lowest point of the shaft and extends to the outdoors. The pipe, duct or conduit shall be level or pitched downward to the outdoors. Mechanically ventilated shafts shall have a minimum airflow velocity in accordance with Table 1109.3.2. The mechanical ventilation shall be continuously operated or activated by a refrigerant detector. Systems utilizing a refrigerant detector shall activate the mechanical ventilation at a maximum refrigerant concentration of 25 percent of the lower flammable limit of the refrigerant. The detector, or a sampling tube that draws air to the detector, shall be located in an area where refrigerant from a leak will concentrate. The shaft shall not be required to be ventilated for double-wall refrigerant pipe where the interstitial space of the double-wall pipe is vented to the outdoors.

SECTION 22: That Section 1109.4 shall be deleted in its entirety.

SECTION 23: That Section 1109.4.1 shall be deleted in its entirety.

SECTION 24: That Section 1109.4.2 shall be deleted in its entirety.

SECTION 25: That Section 1109.7 shall be deleted in its entirety.

SECTION 26: That Section 1110.3 is hereby amended to read as follows:

1110.3 Field test gases. The medium used for field pressure testing the refrigeration system shall be one of the following inert gases: oxygen-free nitrogen, helium argon or premixed nonflammable oxygen-free nitrogen with a tracer gas of hydrogen or helium. For R-744 refrigeration systems,

carbon dioxide shall be allowed as the test medium. For R-718 refrigeration systems, water shall be allowed as the test medium.

SECTION 27: That Section 1110.3.1 is hereby amended to read as follows:

1110.3.1 Test gases not permitted. Oxygen, air, refrigerants other than those identified in Section 1110.3, combustible gases and mixtures containing such gases shall not be used as the pressure test medium.

SECTION 28: That Section 1110.5.1 shall be deleted in its entirety.

SECTION 29: That Section 1110.5.2 shall be deleted in its entirety.

SECTION 30: That Section 1110.6 shall be deleted in its entirety.

SECTION 31: That Section 1110.7 shall be deleted in its entirety.

SECTION 32: That Chapter 15 (Referenced Standards) shall be amended as follows:

1. Under the heading of ASHRAE, revise to adopt the following by reference:

    1. 15-2022 Safety Standard for Refrigeration Systems

    2. 34-2022 Designation and Safety Classification of Refrigerants

2. Under the heading of ASTM, revise to adopt A333-18 Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature and Other Applications with required Notch Toughness.

3. Where reference is made to the ICC International Energy Conservation Code, see the Illinois Energy Conservation Code adopted by the State of Illinois.

4. Where reference is made to the ICC International Plumbing Code, see the Illinois Plumbing Code adopted by the State of Illinois.

5. Under the heading of UL, revise to adopt the following by reference:

    1. UL/CSA 60335-2-40 2022 Household and Similar Electrical Appliances-Safety-Part 2-40; Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers.

    2. UL/CSA 60335-2-89 2021 Household and Similar Electrical Appliances-Safety-Part 2-89; Particular Requirements for

Commercial Refrigerating Appliances with an Incorporated or Remote Refrigerant Unit or Compressor.

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Article V, "Existing Structures" be renumbered to Article VI., "Existing Structures", is hereby amended to read as follows:

ARTICLE VI. EXISTING STRUCTURES

DIVISION 1. GENERALLY

SECTION 1: That Section 6-131, "Adoption of property maintenance code", shall be deleted in its entirety and the following shall be inserted in lieu thereof and shall read as follows:

Sec. 6-131. International Existing Building Code Amendments

There is hereby adopted by the Village the 2021 International Existing Building Code, as hereinafter amended.

Passim. Wherever the phrase "[name of jurisdiction]" or the word "jurisdiction" appears, they shall be deemed to refer to the Village of South Holland.

Passim. Wherever the phrase "code official" or "department of building inspection" appears, it shall be deemed to refer to the Village of South Holland.

SECTION 2: That Sec. 6-132, International Property Maintenance Code Amendments" shall be added and shall read as follows:

There is hereby adopted by the Village the 2021 International Property Maintenance Code, as hereinafter amended.

Passim. Wherever the phrase "[name of jurisdiction]" or the word "jurisdiction" appears, they shall be deemed to refer to the Village of South Holland.

Passim. Wherever the phrase "code official" or "department of building inspection" appears, it shall be deemed to refer to the Village of South Holland.

SECTION 3: That Section 202 shall be amended to include the following definitions:

DEVICE, ELECTRICAL. A unit of an electrical system, other than a conductor, that carries or controls electric energy as its principal function.

MULTIPLE-STATION ALARM. A single-station alarm capable of being interconnected to one or more additional alarms so that the actuation of one causes the appropriate alarm signal to operate in all interconnected alarms.

SINGLE-STATION ALARM. A detector comprising an assembly that incorporates sensor, control components, and an alarm notification appliance in one unit operated from a power source either located in the unit or obtained at the point of installation.

SECTION 4: That Section 304.14, Insect screens, shall be amended by adding the following dates "from April 1st to November 1st.

SECTION 5: That Section 305.7 is hereby created and shall read as follows:

305.7 Interior moisture control. The following steps shall be taken to limit excessive moisture within a rental dwelling unit:

1. All habitable areas shall be kept dry and free from exterior moisture penetration.

2. Building components within the interior, including concealed spaces and cavities that become wet shall be adequately dried to prevent mold growth.

3. All interior areas of the dwelling unit shall be kept free from exterior standing water entering the building. Measures shall be taken in compliance with Section 302.2 to address standing water contacting the building components and permeable building components.

4. Free standing and attached garages shall be kept free from excessive moisture within the structure.

SECTION 6: That Section 305.8 is hereby created and shall read as follows:

305.8 Window coverings. Where window coverings are provided, they shall have all exterior facing glazing panels or windows equipped with blinds, shades, drapes, or curtains. Any other materials applied to obstruct or cover the glazing panel or window is prohibited all window coverings shall be kept in good repair.

SECTION 7: That Section 404.4.4 is hereby amended to read as follows:

404.4.4 Prohibited occupancy. Kitchens, living rooms, family rooms, dining rooms, and other nonhabitable spaces shall not be used for sleeping purposes.

SECTION 8: That Section 602.3, Heat Supply, shall be amended by adding the following dates "from October 1st to May 15th ".

SECTION 9: That Section 602.4, Occupiable work spaces, shall be amended by adding the following dates "from October 1st to May 15th ".

SECTION 10: That Section 603.7 is hereby created and shall read as follows:

603.7 Exhaust discharge. Domestic cooking exhaust equipment within a rental dwelling shall discharge to the outdoors through a duct. The duct shall have a smooth interior surface, shall be airtight, shall be equipped with a backdraft damper and shall be independent of all other exhaust systems. Ducts serving domestic cooking exhaust equipment shall not terminate in an attic or crawl space or areas inside the building.

SECTION 11: That Section 604.4 is hereby created and shall read as follows:

604.4 Ground-Fault Circuit-Interrupter (GFCI). Within a dwelling or dwelling unit GFCI protection installed under the adopted edition of the National Electrical Code shall be maintained and operational in compliance with the product listing. Where a GFCI protection device is no longer operational, the device shall be immediately replaced.

SECTION 12: That Section 604.5 is hereby created and shall read as follows:

604.5 Arc Fault Circuit-Interrupter (AFCI). Within a dwelling or dwelling unit AFCI protection installed under the adopted edition of the National Electrical Code shall be maintained and operational in compliance with the product listing. Where a AFCI protection device is no longer operational, the device shall be immediately replaced.

SECTION 13: That Section 702.4.1 is hereby created and shall read as follows:

702.4.1 Rental dwelling unit escape and rescue openings. Existing rental dwelling units shall have emergency escape and rescue openings in compliance with the adopted edition of the International Residential Code. Rental house escape and rescue openings that were legally modified under the 2018 International Residential Code are not required to update to the current code. Approved permanently installed platforms and steps meeting current building codes may be used to meet the sill height requirement.

Exception:

Where the creation of the escape and rescue opening is not structurally feasible, The Building Official may alter this requirement to meet the intent or waive this requirement.

SECTION 14: That Section 704.6.1 is hereby amended to read as follows:

704.6.1 Where required. Existing Group I-1 and R occupancies shall be provided with single-station smoke alarms in accordance with Sections 704.6.1.1 through 704.6.1.4. Interconnection and power sources shall be in accordance with Sections 704.6.2 and 704.6.3.

SECTION 15: That Section 704.6.2 is hereby amended to read as follows:

704.6.2 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling or sleeping unit, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

Exceptions:

1. Interconnection is not required in buildings that are not undergoing alterations, repairs or construction of any kind.

2. Smoke alarms in existing areas are not required to be interconnected where alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available that could provide access for interconnection without the removal of interior finishes.

3. Rental dwellings - "Exceptions" are not applicable.

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Division 3, "Boarding" shall be amended to be entitled "Board-Up", and Section 6-159 shall be deleted in its entirety and the following shall be inserted and shall read as follows:

DIVISION 3. BOARD-UP

Sec. 6-159. Defined.

Every owner or occupant of any structure shall be responsible for keeping all windows and doors of such structures, whether occupied or not, enclosed by materials ordinarily and customarily used either by builders or contractors or manufactured for such purposes, and shall not permit enclosure by board up, closing up or other means except in the event such structure is damaged by glass breakage or vandalism; in which event, one-half-inch wire mesh screening may be installed over the window or door after the broken glass or damaged door has been replaced. All board up must be painted white on the exterior facing side of the board.

Should a structure be damaged by fire, tornado or similar catastrophe, the owner or occupant shall be permitted to board the windows and doors of such structure, as may be required, for a period of not to exceed sixty (60) days, and shall, prior to the expiration of such time, make the required repairs and installations in the customary and usual manner; provided, however, that the president and board of trustees may authorize an extension of such period when presented with good and sufficient reasons by the owner or occupant for the failure to remove such boarding.

Every owner or occupant of a structure which shall be in violation of this section upon its effective date shall have ninety (90) days from said effective date to comply with the provisions of this section.

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Article VI, "House Drains; Sewers" be renumbered to Article VII., "House Drains; Sewers.

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Article VII, "Fences" be renumbered to Article VIII., "Reserved".

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Sec. 6-196 to and including Sec. 6-201 are hereby deleted in their entirety and Secs. 6-202-6-215 shall be inserted and shall read as follows:

Secs. 6-202 - 6-215. Reserved.

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Article VIII, "Swimming Pools" be renumbered to Article IX., "Swimming Pools", and shall be amended to read as follows:

SECTION 1: That Sec. 6-216, entitled "Adoption of swimming pool code", is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

ARTICLE IX. SWIMMING POOLS

Sec. 6-216. Adoption of swimming pool code.

A certain document, three (3) copies of which are on file in the office of the village clerk of the Village of South Holland being marked and designated a the International Swimming Pool and Spa Code (2021) be and is hereby adopted as the swimming pool code of the Village of South Holland of the State of Illinois, for the control of the buildings and structures as herein provided; and each and all of the regulations, provisions, penalties, conditions and terms of said International Swimming Pool and Spa Code are hereby referred to, adopted and made a part hereof as if fully set out in this section.

There is hereby adopted by the Village the 2021 International Swimming Pool and Spa Code, as hereinafter amended.

Passim. Wherever the phrase "[name of jurisdiction]" or the word "jurisdiction" appears, they shall be deemed to refer to the Village of South Holland.

Passim. Wherever the phrase "code official" or "department of building inspection" appears, it shall be deemed to refer to the Village of South Holland.

SECTION 2: That Sec. 6-217, entitled "Compliance with article required" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-217. Compliance with article required.

It shall be unlawful to construct, maintain, install or enlarge any swimming pool in the village, except in compliance with all the provisions of this article and the adopted edition of the International Swimming Pool and Spa Code.

SECTION 3: That Sec. 6-219, entitled "Drawings and plans" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-219. Drawings and plans.

Construction documents shall be prepared and submitted in compliance with the adopted edition of the International Swimming Pool and Spa Code.

SECTION 4: That Sec. 6-221, entitled "Recirculation pools" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-221. Recirculation pools.

Swimming pools and spas shall be designed and installed in compliance with the adopted edition of the International Swimming Pool and Spa Code.

SECTION 5: That Sec. 6-222, entitled "Construction specifications, materials" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-222. Construction specifications, materials.

Swimming pools and spas shall be constructed in compliance with the adopted edition of the International Swimming Pool and Spa Code.

SECTION 6: That Sec. 6-223, entitled "Structural design" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-223. Structural design.

Swimming pools and spas shall be designed in compliance with the adopted edition of the International Swimming Pool and Spa Code and the International Building Code to resist all imposed loads.

SECTION 7: That Sec. 6-224, entitled "Walk areas" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-224. Walk areas.

Unobstructed walk areas and not less than thirty-six (36) inches wide shall be provided to extend entirely around the pool. The walking area or pool deck shall be constructed in compliance with the adopted edition of the International Swimming Pool and Spa Code.

SECTION 8: That Sec. 6-225, entitled "Fences" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-225. Fences.

Barrier protection around swimming pools and spas shall be in accordance with the adopted edition of the International Swimming Pool and Spa Code. Where a conflict occurs within the fencing requirements of the municipality and the International Swimming Pool and Spa Code, the more restrictive fencing or barrier provisions shall govern.

SECTION 9: That Sec. 6-226, entitled "Steps or ladders" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-226. Steps or ladders.

Access to enter a swimming pool or spa shall be in compliance with the adopted edition of the International Swimming Pool and Spa Code.

SECTION 10: That Sec. 6-227, entitled "Skimmers" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-227. Skimmers.

Swimming pool skimmers and anti-entrapment devices shall be in compliance with the adopted edition of the International Swimming Pool and Spa Code.

SECTION 11: That Sec. 6-229, entitled "Inlets" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-229. Inlets.

The swimming pool or spa piping and circulation system shall comply with the adopted edition of the International Swimming Pool and Spa Code.

SECTION 12: That Sec. 6-230, entitled "Outlets" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-230. Outlets.

(a) The swimming pool or spa piping and circulation system shall comply with the adopted edition of the International Swimming Pool and Spa Code.

(b) Water drained from the pool shall not be discharged to the sewer system during periods of rain or storms. At no time shall the rate of drain water discharge exceed a flow of two hundred (200) gallons per minute.

SECTION 13: That Sec. 6-231, entitled "Recirculation system and appurtenances" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-231. Recirculation system and appurtenances.

The swimming pool or spa recirculation system shall comply with the adopted edition of the International Swimming Pool and Spa Code.

SECTION 14: That Sec. 6-232, entitled "Electrical requirements" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-232. Electrical requirements.

All electrical installations shall meet the requirements of the adopted editions of the International Swimming Pool and Spa Code and National Electrical Code. No swimming pool installation shall be allowed without the prior approval for location from Commonwealth Edison Company.

SECTION 15: That Sec. 6-233, entitled "Safety Precautions" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-233. Safety precautions.

Swimming pools and spas shall meet the safety requirements prescriptively required by the adopted edition of the International Swimming Pool and Spa Code.

SECTION 16: That Sec. 6-234, entitled "Inspection" is hereby deleted in its entirety and the following shall be inserted in lieu thereof:

Sec. 6-234. Inspection.

Inspections for swimming pools and spas constructed within the Village of South Holland shall be in compliance with this chapter, adopted edition of the International Swimming Pool and Spa Code, and any applicable adopted code relating to the design.

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Article IX, "Sewer Use and Sewer Charge" be renumbered to Article X., "Sewer Use and Sewer Charge".

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Article X, "Landscaping" be renumbered to Article XI., "Landscaping".

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Article XI, "Basketball Standards" be renumbered to Article XII., "Basketball Standards".

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Article XII, "Plants and Weeds" be renumbered to Article XIII., "Plants and Weeds".

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Article XIII, "Certificate of Payment" be renumbered to Article XIV., "Certificate of Payment".

BE IT FURTHER ORDAINED by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, that Chapter 6, "Buildings and Building Regulations", Article XIV, "Gatherings in Residential Areas" be renumbered to Article XV. "Gatherings in Residential Areas".

BE IT FURTHER ORDAINED that if any provision of this ordinance or application thereof to any person or circumstance shall be held invalid, such invalidity shall not affect other provisions or application of this Ordinance which can be given effect without the invalid provision or application and, to this end, the provisions of this Ordinance are declared to be severable.

The above and foregoing Ordinance shall be in full force and effect from and after its adoption, approval and publication, as provided by law. Publication in pamphlet form is authorized.

Adopted by the President and Board of Trustees of the Village of South Holland, Cook County, Illinois, at a meeting legally assembled on the 13th day of January, 2026, on motion of Trustee RUSSELL, seconded by Trustee JOHNSON, carried on the aye votes of Trustees DEYOUNG, NYLEN, RUSSELL, JOHNSON, REED.

Voting nay: 0 Absent: PERKINS

Village Clerk

APPROVED:

Village President

Passed: 1/13/2026
Approved: 1/13/2026
Published in pamphlet form: 1/14/2026

EXHIBIT "A"

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE[b]			USE-CLOSE SYSTEMS[b]			USE-OPEN SYSTEMS[b]	
			Solid Pounds (Cubic Feet)	Liquid Gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds (cubic feet)	Liquid gallons (pounds)
Flammable gas	Gaseous									
	1A and 1B (High BV)r	H-2	NA	NA	1,000[d,e]	NA	NA	1,000[d,e]	NA	NA
	1B (Low BV)r				162,500[d,e]			162,500[d,e]		
	Liquified									
	1A and 1B (High BV)r	H-2	NA	(150)[d,e]	NA	NA	(150)[d,e]	NA	NA	NA
	1B (Low BV)r			(10,000)[d,e]			(10,000)[d,e]			

For SI: 1 cubic foot = 0.028 m3, 1 pound = 0.454 kg, 1 gallon = 3.785 L.
NL = Not Limited; NA = Not Applicable; UD = Unclassified Detonable

a. For use of control areas, see Section 414.2.
b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
c. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited provided the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.
e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, day boxes, gas cabinets or exhausted enclosures or in listed safety cans in accordance with Section 5003.9.10 of the International Fire Code. Where Note d also applies, the increase for both notes shall be applied accumulatively.
f. The permitted quantities shall not be limited in a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
g. Permitted only in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
h. Containing not more than the maximum allowable quantity per control area of Class IA, IB or IC flammable liquids.
i. The maximum allowable quantity shall not apply to fuel oil storage complying with Section 603.3.2 of the International Fire Code.
j. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.
k. A maximum quantity of 200 pounds of solid or 20 gallons of liquid Class 3 oxidizers is allowed when such materials are necessary for maintenance purposes, operation or sanitation of equipment. Storage containers and the manner of storage shall be approved.
l. Net weight of the pyrotechnic composition of the fireworks. Where the net weight of the pyrotechnic composition of the fireworks is not known, 25 percent of the gross weight of the fireworks, including packaging, shall be used.
m. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 5003.1.2 of the International Fire Code.
n. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).
o. Densely packed baled cotton that complies with the packing requirements of ISO 8115 shall not be included in this material class.
p. The following shall not be included in determining the maximum allowable quantities:
   1. Liquid or gaseous fuel in fuel tanks on vehicles.
   2. Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with this code.
   3. Gaseous fuels in piping systems and fixed appliances regulated by the International Fuel Gas Code.
   4. Liquid fuels in piping systems and fixed appliances regulated by the International Mechanical Code.
q. Where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3.
r. "High BV" Category 1B flammable gas has a burning velocity greater than 3.9 in/s (10cm/s). "Low BV" Category 1B flammable gas has a burning velocity of 3.9in/s (10cm/s) or less.

EXHIBIT "B"

TABLE R301.2
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

GROUND SNOW LOAD[o]	WIND DESIGN				SEISMIC DESIGN CATEGORY[f]	SUBJECT TO DAMAGE FROM			ICE BARRIER UNDERLAYMENT REQUIRED[h]	FLOOD HAZARDS[g]	AIR FREEZING INDEX[i]	MEAN ANNUAL TEMP[j]
	Speed (mph)	Topographic effects[k]	Special wind region[l]	Windborne debris zone[m]		Weathering[a]	Frost line depth[b]	Termite[c]				
[illegible]	[illegible]	NO	NO	NO	B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

MANUAL J DESIGN CRITERIA[n]						
Elevation	Altitude correction factor[n]	Coincident wet bulb	Indoor winter design dry-bulb temperature	Indoor winter design dry-bulb temperature	Outdoor winter design dry-bulb temperature	Heating temperature difference
[illegible]	[illegible]	[illegible]	70	70	[illegible]	[illegible]
Latitude	Daily range	Indoor summer design relative humidity	Summer design gains	Indoor summer design dry-bulb temperature	Outdoor summer design dry-bulb temperature	Cooling temperature difference
[illegible]	Medium	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

For SI: 1 pound per square foot = [illegible] kPa, 1 mile per hour = [illegible] m/s.

a. [illegible]

b. [illegible]

c. [illegible]

d. [illegible]

e. [illegible]

f. [illegible]

g. [illegible]

h. [illegible]

i. [illegible]

j. [illegible]

k. [illegible]

l. [illegible]

m. [illegible]

n. [illegible]

o. [illegible]

TABLE R301.2
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

GROUND SNOW LOAD[o]	WIND DESIGN				SEISMIC DESIGN CATEGORY[f]	SUBJECT TO DAMAGE FROM			ICE BARRIER UNDERLAYMENT REQUIRED[h]	FLOOD HAZARDS[g]	AIR FREEZING INDEX[i]	MEAN ANNUAL TEMP[j]
	Speed (mph)	Topographic effects[k]	Special wind region[l]	Windborne debris zone[m]		Weathering[a]	Frost line depth[b]	Termite[c]				
25-psf	110	NO	NO	NO	B	Severe	42"	Yes	Yes	Note #1	1433	50.6

MANUAL J DESIGN CRITERIA[n]							
Elevation	Altitude correction factor[d]	Coincident wet bulb	Indoor winter design dry-bulb temperature	Indoor winter design dry-bulb temperature	Outdoor winter design dry-bulb temperature	Heating temperature difference	
601	0.986	73	70	70	0	70	
Latitude	Daily range	Indoor summer design relative humidity	Summer design gains	Indoor summer design dry-bulb temperature	Outdoor summer design dry-bulb temperature	Cooling temperature difference	
41	Medium	50%	31	75	91	16	

Note #1: Refer to the Village of South Holland Municipal Code

For SI: 1 pound per square foot = 0.0479 kPa, 1 mile per hour = 0.447 m/s.

a.Where weathering requires a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code, the frost line depth strength required for weathering shall govern. The weathering column shall be filled in with the weathering index, "negligible," "moderate" or "severe" for concrete as determined from Figure R301.2(1). The grade of masonry units shall be determined from ASTM C34, ASTM C55, ASTM C62, ASTM C73, ASTM C90, ASTM C129, ASTM C145, ASTM C216 or ASTM C652.

b.Where the frost line depth requires deeper footings than indicated in Figure R403.1(1), the frost line depth strength required for weathering shall govern. The jurisdiction shall fill in the frost line depth column with the minimum depth of footing below finish grade.

c.The jurisdiction shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.

d.The jurisdiction shall fill in this part of the table with the wind speed from the basic wind speed map [Figure R301.2(2). Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.

e.The jurisdiction shall fill in this section of the table to establish the design criteria using Table 1A from ACCA Manual J or established criteria determined by the jurisdiction.

f.The jurisdiction shall fill in this part of the table with the seismic design category determined from Section R301.2.2.1.

g.The jurisdiction shall fill in this part of the table with: the date of the jurisdiction's entry into the National Flood Insurance Program (date of adoption of the first code or ordinance for management of flood hazard areas); and the title and date of the currently effective Flood Insurance Study or other flood hazard study and maps adopted by the authority having jurisdiction, as amended.

h.In accordance with Sections R905.1.2, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1, where there has been a history of local damage from the effects of ice damming, the jurisdiction shall fill in this part of the table with "YES." Otherwise, the jurisdiction shall fill in this part of the table with "NO."

i.The jurisdiction shall fill in this part of the table with the 100-year return period air freezing index (BF-days) from Figure R403.3(2) or from the 100-year (99 percent) value on the National Climatic Data Center data table "Air Freezing Index-USA Method (Base 32°F)."

j.The jurisdiction shall fill in this part of the table with the mean annual temperature from the National Climatic Data Center data table "Air Freezing Index-USA Method (Base 32°F)."

k.In accordance with Section R301.2.1.5, where there is local historical data documenting structural damage to buildings due to topographic wind speed-up effects, the jurisdiction shall fill in this part of the table with "YES." Otherwise, the jurisdiction shall indicate "NO" in this part of the table.

l.In accordance with Figure R301.2(2), where there is local historical data documenting unusual wind conditions, the jurisdiction shall fill in this part of the table with "YES" and identify any specific requirements. Otherwise, the jurisdiction shall indicate "NO" in this part of the table.

m.In accordance with Section R301.2.1.2 the jurisdiction shall indicate the wind-borne debris wind zone(s). Otherwise, the jurisdiction shall indicate "NO" in this part of the table.

n.The jurisdiction shall fill in these sections of the table to establish the design criteria using Table 1a or 1b from ACCA Manual J or established criteria determined by the jurisdiction.

o.The jurisdiction shall fill in this section of the table using the Ground Snow Loads in Figures R301.2(3) and R301.2(4).

EXHIBIT "C"

EXHIBIT "D"

TABLE 1103.1
REFRIGERANT CLASSIFICATION, AMOUNT AND OEL

CHEMICAL REFRIGERANT	FORMULA	CHEMICAL NAME OF BLEND	REFRIGERANT SAFETY GROUP CLASSIFICATION	AMOUNT OF REFRIGERANT PER OCCUPIED SPACE							[F] DEGREES OF HAZARD[a]
				RCL			LFL			OEL[e]	
				Pounds per 1,000 cubic feet lb/MCF	ppm	g/m^3	lb/MCF	ppm	g/m^3	OEL[e] ppm	
R-11[d,c]	CCl_3F	trichlorofluoromethane	A1	0.39	1,100	6.2 6.1				C1,000	2-0-0[b]
R-12[d,c]	CCl_2F_2	dichlorodifluoromethane	A1	5.6	18,000	90				1,000	2-0-0[b]
R-13[d,c]	$CClF_3$	chlorotrifluoromethane	A1	—	—	—				1,000	2-0-0[b]
R-13B1[d,c]	$CBrF_3$	bromotrifluoromethane	A1	—	—	—				1,000	2-0-0[b]
R-13I1	CF_3I	trifluoroiodomethane	A1	1.0	2,000	15				500	
R-14	CF_4	tetrafluoromethane (carbon tetrafluoride)	A1	25	110,000	400				1,000	2-0-0[b]
R-22	$CHClF_2$	chlorodifluoromethane	A1	13	59,000	210				1,000	2-0-0[b]
R-23	CHF_3	trifluoromethane (fluoroform)	A1	7.4	41,000	120				1,000	2-0-0[b]
R-30	CH_2Cl_2	dichloromethane (methylene chloride)	B1	—	—	—				—	—
R-31	CH_2ClF	Chlorofluoromethane	—	—	—	—				—	—
R-32	CH_2F_2	difluoromethane (methylene fluoride)	A2[f] A2L	4.8	36,000	77	19.1	144,000	306	1,000	1-4-0
R-40	CH_3Cl	chloromethane (methyl chloride)	B2	—	—	—				—	—
R-41	CH_3F	Fluoromethane (methyl fluoride)	—	—	—	—				—	
R-50	CH_4	methane	A3	—	—	—		50,000		1,000	—
R-113[d,c]	CCl_2FCClF_2	1,1,2-trichloro-1,2,2-trifluoroethane	A1	1.2	2,600	20				1,000	2-0-0[b]
R-114[d,c]	$CClF_2CClF_2$	1,2-dichloro-1,1,2,2-tetrafluoroethane	A1	8.7	20,000	140				1,000	2-0-0[b]
R-115	$CClF_2CF_3$	chloropentafluoroethane	A1	47	120,000	760				1,000	—
R-116	CF_3CF_3	hexafluoroethane	A1	34	97,000	550				1,000	1-0-0

R-123	$CHCl_2CF_3$	2,2-dichloro-1,1,1-trifluoroethane	B1	3.5	9,100	57				50	2-0-0b
R-124	$CHClFCF_3$	2-chloro-1,1,1,2-tetrafluoroethane	A1	3.5	10,000	56				1,000	2-0-0b
R-125	CHF_2CF_3	pentafluoroethane	A1	23	75,000	370				1,000	2-0-0b
R-134a	CH_2FCF_3	1,1,1,2-tetrafluoroethane	A1	13	50,000	210				1,000	2-0-0b
R-141b	CH_3CCl_2F	1,1-dichloro-1-fluoroethane	—	0.78	2,600	12	17.8	60,000	287	500	2-1-0
R-142b	CH_3CClF_2	1-chloro-1, 1-difluoroethane	A2	5.1	20,000	83 82	20.4	80,000	329	1,000	2-4-0
R-143a	CH_3CF_3	1,1,1-trifluoroethane	A2 A2L	4.5 4.4	21,000	70	17.5	82,000	282	1,000	2-0-0b
R-152a	CH_3CHF_2	1,1-difluoroethane	A2	2.0	12,000	32	8.1	48,000	130	1,000	1-4-0
R-170	CH_3CH_3	ethane	A3	0.54	7,000	8.7 8.6	2.4	31,000	38	1,000	2-4-0
R-E170	CH_3OCH_3	methoxymethane (dimethyl ether)	A3	1.0	8,500	16	4.0	34,000	64	1,000	—
R-218	$CF_3CF_2CF_3$	octafluoropropane	A1	43	90,000	690				1,000	2-0-0b
R-227ea	CF_3CHFCF_3	1,1,1,2,3,3,3-heptafluoropropane	A1	36	84,000	580				1,000	—
R-236fa	$CF_3CH_2CF_3$	1,1,1,3,3,3-hexafluoropropane	A1	21	55,000	340				1,000	2-0-0b
R-245fa	$CHF_2CH_2CF_3$	1,1,1,3,3-pentafluoropropane	B1	12	34,000	190				300	2-0-0b
R-290	$CH_3CH_2CH_3$	propane	A3	0.56 0.59	5,300	9.5	2.4	21,000	38	1,000	2-4-0
R-C318	-$(CF_2)_4$-	octafluorocyclobutane	A1	41	80,000	660 650				1,000	—
R-400*	zeotrope	R-12/114 (50.0/50.0)	A1	10	28,000	160				1,000	2-0-0b
R-400*	zeotrope	R-12/114 (60.0/40.0)	A1	11	30,000	170				1,000	—
R-401A	zeotrope	R-22/152a/124 (53.0/13.0/34.0)	A1	6.6	27,000	110				1,000	2-0-0b
R-401B	zeotrope	R-22/152a/124 (61.0/11.0/28.0)	A1	7.2	30,000	120				1,000	2-0-0b
R-401C	zeotrope	R-22/152a/124 (33.0/15.0/52.0)	A1	5.2	20,000	84				1,000	2-0-0b
R-402A	zeotrope	R-125/290/22 (60.0/2.0/38.0)	A1	17	66,000	270				1,000	2-0-0b
R-402B	zeotrope	R-125/290/22 (38.0/2.0/60.0)	A1	15	63,000	240				1,000	2-0-0b
R-403A	zeotrope	R-290/22/218 (5.0/75.0/20.0)	A2	7.6	33,000	120				1,000	2-0-0b
R-403B	zeotrope	R-290/22/218 (5.0/56.0/39.0)	A1	18	70,000 68,000	290				1,000	2-0-0b
R-404A	zeotrope	R-125/143a/134a (44.0/52.0/4.0)	A1	31	130,000	500				1,000	2-0-0b
R-405A	zeotrope	R-22/152a/142b/C318 (45.0/7.0/5.5/2.5)	—	16	57,000	260				1,000	—

R-406A	zeotrope	R-22/600a/142b (55.0/4.0/41.0)	A2	4.7	21,000	25 75	18.8	82,000	301.9	1,000	—
R-407A	zeotrope	R-32/125/134a (20.0/40.0/40.0)	A1	19	83,000	300				1,000	2-0-0^b
R-407B	zeotrope	R-32/125/134a (10.0/70.0/20.0)	A1	21	79,000	330				1,000	2-0-0^b
R-407C	zeotrope	R-32/125/134a (23.0/25.0/52.0)	A1	18	81,000	290				1,000	2-0-0^b
R-407D	zeotrope	R-32/125/134a (15.0/15.0/70.0)	A1	16	68,000	250				1,000	2-0-0^b
R-407E	zeotrope	R-32/125/134a (25.0/15.0/60.0)	A1	17	80,000	280				1,000	2-0-0^b
R-407F	zeotrope	R-32/125/134a (30.0/30.0/40.0)	A1	20	95,000	320				1,000	—
R-407G	zeotrope	R-32/125/134a (2.5/2.5/95.0)	A1	13	52,000	210				1,000	—
R-407H	zeotrope	R-32/125/134a (32.5/15.0/52.5)	A1	19	92,000	300				1,000	—
R-407I	zeotrope	R-32/125/134a (19.5/8.5/72.0)	A1	16	71,100	250				1,000	
R-408A	zeotrope	R-125/143a/22 (7.0/46.0/47.0)	A1	21	95,000 94,000	340 330				1,000	2-0-0^b
R-409A	zeotrope	R-22/124/142b (60.0/25.0/15.0)	A1	7.1	29,000	110				1,000	2-0-0^b
R-409B	zeotrope	R-22/124/142b (65.0/25.0/10.0)	A1	7.3	30,000	120				1,000	2-0-0^b
R-410A	zeotrope	R-32/125 (50.0/50.0)	A1	26	140,000	420				1,000	2-0-0^b
R-410B	zeotrope	R-32/125 (45.0/55.0)	A1	27	140,000	430				1,000	2-0-0^b
R-411A	zeotrope	R-1270/22/152a (1.5/87.5/11.0)	A2	2.9	14,000	46	13.6	55,000	185.5	990 970	—
R-411B	zeotrope	R-1270/22/152a (3.0/94.0/3.0)	A2	2.8	13,000	45	14.8	70,000	239.3	980 940	—
R-412A	zeotrope	R-22/218/142b (70.0/5.0/25.0)	A2	5.1	22,000	82	20.5	87,000	329.6	1,000	—
R-413A	zeotrope	R-218/134a/600a (9.0/88.0/3.0)	A2	5.8	22,000	94 93	23.4	88,000	374.9	1,000	—
R-414A	zeotrope	R-22/124/600a/142b (51.0/28.5/4.0/16.5)	A1	6.4	26,000	100				1,000	—
R-414B	zeotrope	R-22/124/600a/142b (50.0/39.0/1.5/9.5)	A1	6.0	23,000	96 95				1,000	—
R-415A	zeotrope	R-22/152a (82.0/18.0)	A2	2.9	14,000	47	11.7	56,000	187.9	1,000	—
R-415B	zeotrope	R-22/152a (25.0/75.0)	A2	2.1	12,000	34	8.4	47,000	135.1	1,000	—
R-416A	zeotrope	R-134a/124/600 (59.0/39.5/1.5)	A1	3.9	14,000	62				1,000	2-0-0^b
R-417A	zeotrope	R-125/134a/600 (46.6/50.0/3.4)	A1	3.5	13,000	56 55				1,000	2-0-0^b
R-417B	zeotrope	R-125/134a/600 (79.0/18.3/2.7)	A1	4.3	15,000	70 69				1,000	—
R-417C	zeotrope	R-125/134a/600 (19.5/78.8/1.7)	A1	5.4	21,000	87				1,000	—
R-418A	zeotrope	R-290/22/152a (1.5/96.0/2.5)	A2	4.8	22,000	77	19.2	89,000	308.4	1,000	—
R-419A	zeotrope	R-125/134a/E170 (77.0/19.0/4.0)	A2	4.2	15,000	67	16.7	60,000	268.6	1,000	—

R-419B	zeotrope	R-125/134a/E170 (48.5/48.0/3.5)	A2	4.6	17,000	74	18.5	50,000	297.2	1,000	—
R-420A	zeotrope	R-134a/142b (88.0/12.0)	A1	12	45,000 44,000	180 180				1,000	2-0-0b
R-421A	zeotrope	R-125/134a (58.0/42.0)	A1	17	61,000	280				1,000	2-0-0b
R-421B	zeotrope	R-125/134a (85.0/15.0)	A1	21	69,000	330				1,000	2-0-0b
R-422A	zeotrope	R-125/134a/600a (85.1/11.5/3.4)	A1	18	63,000	290				1,000	2-0-0b
R-422B	zeotrope	R-125/134a/600a (55.0/42.0/3.0)	A1	16	56,000	250				1,000	2-0-0b
R-422C	zeotrope	R-125/134a/600a (82.0/15.0/3.0)	A1	18	62,000	290				1,000	2-0-0b
R-422D	zeotrope	R-125/134a/600a (65.1/31.5/3.4)	A1	16	58,000	260				1,000	2-0-0b
R-422E	zeotrope	R-125/134a/600a (58.0/39.3/2.7)	A1	16	57,000	260				1,000	—
R-423A	zeotrope	R-134a/227ea (52.5/47.5)	A1	19	59,000	310 300				1,000	2-0-0c
R-424A	zeotrope	R-125/134a/600a/600/601a (50.5/47.0/0.9/1.0/0.6)	A1	6.2	23,000	100				970 990	2-0-0b
R-425A	zeotrope	R-32/134a/227ea (18.5/69.5/12.0)	A1	16	72,000	260				1,000	2-0-0b
R-426A	zeotrope	R-125/134a/600a/601a (5.1/93.0/1.3/0.6)	A1	5.2	20,000	83				990	—
R-427A	zeotrope	R-32/125/143a/134a (15.0/25.0/10.0/50.0)	A1	18	79,000	290				1,000	2-1-0
R-428A	zeotrope	R-125/143a/290/600a (77.5/20.0/0.6/1.9)	A1	23	83,000 84,000	370				1,000	—
R-429A	zeotrope	R-E170/152a/600a (60.0/10.0/30.0)	A3	0.81	6,300	13	3.2	25,000	51.4	1,000	—
R-430A	zeotrope	R-152a/600a (76.0/24.0)	A3	1.3	8,000	21	5.2	32,000	84.0	1,000	—
R-431A	zeotrope	R-290/152a (71.0/29.0)	A3	0.69 0.68	5,500	11	2.7	22,000	38.6	1,000	—
R-432A	zeotrope	R-1270/E170 (80.0/20.0)	A3	0.13	1,200	2.1	7.4	22,000	39.2	700 550	—
R-433A	zeotrope	R-1270/290 (30.0/70.0)	A3	0.34	3,100	5.5	2.4	20,000	32.4	880 760	—
R-433B	zeotrope	R-1270/290 (5.0-95.0)	A3	0.57 0.35	4,000 3,500	9.4 6.3	2.0	18,000	32.1	950	—
R-433C	zeotrope	R-1270/290 (25.0-75.0)	A3	0.41	3,600 3,700	6.6 6.5	2.0	18,000	33.8	790	—
R-434A	zeotrope	R-125/143a/600a (63.2/18.0/16.0/2.8)	A1	20	73,000	320				1,000	—
R-435A	zeotrope	R-E170/152a (80.0/20.0)	A3	1.1	8,500	17	4.3	34,000	68.2	1,000	—
R-436A	zeotrope	R-290/600a (56.0/44.0)	A3	0.50	4,000	8.1	2.0	16,000	32.3	1,000	—
R-436B	zeotrope	R-290/600a (52.0/48.0)	A3	0.51	4,000	8.1 8.2	2.0	16,000	32.7	1,000	—
R-436C	zeotrope	R-290/600a (95.0/5.0)	A3	0.57	5,000	9.1	2.3	20,000	36.5	1,000	
R-437A	zeotrope	R-125/134a/600/601 (19.5/78.5/1.4/0.6)	A1	5.0 5.1	19,000	82				990	—
R-438A	zeotrope	R-32/125/134a/600/601a (8.5/45.0/44.2/1.7/0.6)	A1	4.9	20,000	79				990	—

R-439A	zeotrope	R-32/125/600a (50.0/47.0/3.0)	A2	4.7	26,000	76	18.9	104,000	303.3	990 1,000	—
R-440A	zeotrope	R-290/134a/152a (0.6/1.6/97.8)	A2	1.9	12,000	31	7.8	45,000	124.7	1,000	—
R-441A	zeotrope	R-170/290/600a/600 (3.1/54.8/6.0/36.1)	A3	0.39	3,200	6.3	2.0	16,000	31.7	1,000	—
R-442A	zeotrope	R-32/125/134a/152a/227ea (31.0/31.0/30.0/3.0/5.0)	A1	21	100,000	330				1,000	—
R-443A	zeotrope	R-1270/290/600a (55.0/40.0/5.0)	A3	0.19	1,700	3.1	2.2	20,000	35.4	580 640	—
R-444A	zeotrope	R-32/152a/1234ze(E) (12.0/5.0/83.0)	A2 A2L	5.1	21,000	81	19.9	82,000	324.8	850	—
R-444B	zeotrope	R-32/152a/1234ze(E) (41.5/10.0/48.5)	A2 A2L	4.3	23,000	69	17.2	93,000	277.3	890 930	—
R-445A	zeotrope	R-744/134a/1234ze(E) (6.0/9.0/85.0)	A2 A2L	4.2	16,000	67	2.7	63,000	347.4	930	—
R-446A	zeotrope	R-32/1234ze(E)/600 (68.0/29.0/3.0)	A2 A2L	2.5	16,000	39	13.5	62,000	217.3	960	—
R-447A	zeotrope	R-32/125/1234ze(E) (68.0/3.5/28.5)	A2 A2L	2.6	16,000	42	18.9	85,000	303.9	900 980	—
R-447B	zeotrope	R-32/125/1234ze(E) (68.0/8.0/24.0)	A2 A2L	23 2.6	30,000 16,000	360 42	20.6	121,000	312.7	970	
R-448A	zeotrope	R-32/125/1234yf/134a/1234ze(E) (26.0/26.0/20.0/21.0/7.0)	A1	24	110,000	390				890 860	—
R-449A	zeotrope	R-32/125/1234yf/134a (24.3/24.7/25.3/25.7)	A1	23	100,000	370				830 840	—
R-449B	zeotrope	R-32/125/1234yf/134a (25.2/24.3/23.2/27.3)	A1	23	100,000	370				850	
R-449C	zeotrope	R-32/125/1234yf/134a (20.0/20.0/31.0/29.0)	A1	23	98,000	360				800	
R-450A	zeotrope	R-134a/1234ze(E) (42.0/58.0)	A1	20	72,000	320				880	—
R-451A	zeotrope	R-1234yf/134a (89.8/10.2)	A2 A2L	5.3 5.0	18,000	81	20.3	70,000	325.9	530 530	—
R-451B	zeotrope	R-1234yf/134a (88.8/11.2)	A2 A2L	5.3 5.0	18,000	81	20.3	70,000	326.6	530	—
R-452A	zeotrope	R-32/125/1234yf (11.0/59.0/30.0)	A1	27	14,000 100,000	440				780 780	—
R-452B	zeotrope	R-32/125/1234yf (67.0/7.0/26.0)	A2 A2L	23 5.8	30,000	360 77	19.3	119,000	310.5	870	—
R-452C	zeotrope	R-32/125/1234yf (12.5/61.0/26.5)	A1	27	100,000	430				800 830	
R-453A	zeotrope	R-32/125/134a/227ea/600/601a (20.0/20.0/53.8/5.0/0.6/0.6)	A1	7.8	34,000	120				1,000	
R-454A	zeotrope	R-32/1234yf (35.0/65.0)	A2 A2L	28 3.2	16,000	460 52	18.3	63,000	293.8	680	
R-454B	zeotrope	R-32/1234yf (68.9/31.1)	A2 A2L	26 3.1	19,000	360 49	22.0	77,000	352.6	850	
R-454C	zeotrope	R-32/1234yf (21.5/78.5)	A2 A2L	29 4.4	19,000	460 71	18.0	62,000	289.5	620	
R-455A	zeotrope	R-744/32/1234yf (3.0/21.5/75.5)	A2 A2L	23 4.9	30,000 22,000	490 79	26.9	118,000	432.1	650	
R-456A	zeotrope	R-32/134a/1234ze(E) (6.0/45.0/49.0)	A1	20	77,000	320				900	
R-457A	zeotrope	R-32/1234yf/152a (18.0/70.0/12.0)	A2 A2L	25 3.4	15,000	400 54	11.5	60,000	216.3	650	
R-457B	zeotrope	R-32/1234yf/152a (35.0/55.0/10.0)	A2L	3.7	19,000	59	14.9	76,000	238	730	
R-458A	zeotrope	R-32/125/134a/227ea/236fa (20.5/4.0/61.4/13.5/0.6)	A1	18	76,000	280				1,800	

R-459A	zeotrope	R-32/1234yf/1234ze(E) (68.0/26.0/6.0)	A2*A2L	30 4.3	27,000	260 59	17.4	107,000	271.7	870	
R-459B	zeotrope	R-32/1234yf/1234ze(E) (21.0/69.0/10.0)	A2*A2L	30	16,000 25,000	420 92	31.3	88,000	373.5	640	
R-460A	zeotrope	R-32/125/134a/1234ze(E) (12.0/52.0/14.0/22.0)	A1	24	92,000	380				650 950	
R-460B	zeotrope	R-32/125/134a/1234ze(E) (28.0/25.0/20.0/27.0)	A1	25	120,000	400				950	
R-460C	zeotrope	R-32/125/134a/1234ze(E) (2.5/2.5/46.0/49.0)	A1	20	73,000	310				900	
R-461A	zeotrope	R-32/125/134a/1234ze(E) (2.5/2.5/46.0/49.0)	A1	17	61,000	270				1,000	
R-462A	zeotrope	R-125/143a/134a/227ea/600a (55.0/5.0/32.0/5.0/3.0)	A2	3.9	16,000	62	16.6	105,000	265.8	1,000	
R-463A	zeotrope	R-744/32/125/1234yf/134a (6.0/36.0/30.0/14.0/14.0)	A1	19	98,000	300				990	
R-464A	zeotrope	R-32/125/1234ze(E)/227ea (27.0/27.0/40.0/6.0)	A1	27	120,000	430				930	
R-465A	zeotrope	R-32/290/1234yf (21.0/7.9/71.1)	A2	2.5	12,000	40	10.0	98,000	160.9	660	
R-466A	zeotrope	R-32/125/1311 (49.0/11.5/39.5)	A1	6.2	30,000	99				860	
R-467A	zeotrope	R-32/125/134a/600a (22.0/5.0/72.4/0.6)	A2L	6.2	31,000	110				1,000	
R-468A	zeotrope	R-1132a/32/1234yf (3.5/21.5/75.0)	A2L	4.1	25,000	66				510	
R-469A	zeotrope	R-744/R-32/R-125 (35.0/32.5/32.5)	A1	8	53,000	130				1,600	
R-470A	zeotrope	R-744/32/125/134a/1234ze(E)/227ea (10.0/17.0/19.0/7.0/44.0/3.0)	A1	17	77,000	270				1,100	
R-470B	zeotrope	R-744/32/125/134a/1234ze(E)/227ea (10.0/11.5/11.5/3.0/57.0/7.0)	A1	16	72,000	260				1,100	
R-471A	zeotrope	R-1234ze(E)/227ea/1336mzz(E) (78.7/4.3/17.0)	A1	9.7	31,000	160				710	
R-472A	zeotrope	R-744/32/134a (69.0/12.0/19.0)	A1	4.5	35,000	72				2,700	
R-500*4	azeotrope	R-744/32/125/1234yf/134a (6.0/36.0/30.0/14.0/14.0)	A1	7.6 7.4	30,000 29,000	120				1,000	2-0-0[b]
R-501*4	azeotrope	R-22/12 (75.0/25.0)	A1	13	54,000	210				1,000	—
R-502*4	azeotrope	R-22/115 (48.8/51.2)	A1	21	73,000	330				1,000	2-0-0[b]
R-503*4	azeotrope	R-23/13 (40.1/59.9)	—	—	—	—				1,000	2-0-0[b]
R-504*4	azeotrope	R-32/115 (48.2/51.8)	—	28	140,000	450				1,000	—
R-507A	azeotrope	R-125/143a (50.0/50.0)	A1	32	130,000	520 510				1,000	2-0-0[b]
R-508A	azeotrope	R-23/116 (39.0/61.0)	A1	14	55,000	220				1,000	2-0-0[b]
R-508B	azeotrope	R-23/116 (46.0/54.0)	A1	13	52,000	200				1,000	2-0-0[b]
R-509A	azeotrope	R-22/218 (44.0/56.0)	A1	24	75,000	390 380				1,000	2-0-0[b]
R-510A	azeotrope	R-E170/600a (88.0/12.0)	A3	0.87	7,300	14	3.5	29,000	56.1	1,000	—
R-511A	azeotrope	R-290/E170 (95.0/5.0)	A3	0.59	5,300	9.5	2.4	21,000	38.0	1,000	—

R-512A	azeotrope	R-134a/152a (5.0/95.0)	A2	1.9	31,000	31	2.7	38,000	[illegible]	1,000	—
R-513A	azeotrope	R-1234yf/134a (56.0/44.0)	A1	20	72,000	320				650	—
R-513B	azeotrope	R-1234yf/134a (58.5/41.5)	A1	21	74,000	330				640	
R-514A	azeotrope	R-1336mzz(Z)/1130(E) (74.7/25.3)	B1	0.86	2,400	14				320	
R-515A	azeotrope	R-1234ze(E)/227ea (88.0/12.0)	A1	19	62,000 63,000	300				810	
R-515B	azeotrope	R-1234ze(E)/227ea (91.1/8.9)	A1	18	61,000	290				810	
R-516A	azeotrope	R-1234yf/134a/152a (77.5/8.5/14.0)	A2	3.9 3.1	27,000 23,000	[illegible] 52	13.1	50,000	[illegible]	590	
R-600	$CH_3CH_2CH_2CH_3$	butane	A3	0.15	1,000	2.4	3.0	20,000	48	1,000	1-4-0
R-600a	$CH(CH_3)_2CH_3$	2-methylpropane (isobutane)	A3	0.59	4,000	9.6 9.5	2.4	16,000	38	1,000	2-4-0
R-601	$CH_3CH_2CH_2$ CH_2CH_3	pentane	A3	0.18	1,000	2.9	2.2	12,000	35	600	—
R-601a	$(CH_3)_2CHCH_2CH_3$	2-methylbutane (isopentane)	A3	0.18	1,000	2.9	2.4	13,000	38	600	—
R-610	ethoxyethane (ethyl ether)	$CH_3CH_2OCH_2CH_3$	—	—	—	—				400	—
R-611	methyl formate	$HCOOCH_3$	B2	—	—	—				100	—
R-718	H_2O	water	A1	—	—	—				—	0-0-0
R-744	CO_2	carbon dioxide	A1	4.5	40,000	72				5,000	2-0-0[b]
R-1130(E)	$CHCl=CHCl$	Trans-1,2-dichloroethene	B2	0.25	1,000	4	16	65,000	258	200	
R-1132a	$CF_2=CH_2$	1,1-difluoroethylene	A2	2.0	13,000	33	8.1	50,000	131	500	
R-1150	$CH_2=CH_2$	ethene (ethylene)	A3	—	—	—	2.2	31,000	36	200	1-4-2
R-1224yd(Z)	$CF_3CF=CHCl$	(Z)-1-chloro-2,3,3,3-tetrafluoropropene	A1	23	60,000	360 370				1,000	
R-1233zd(E)	$CF_3CH=CHCl$	trans-1-chloro-3,3,3-trifluoro- 1-propene	A1	5.3	16,000	85				800	—
R-1234yf	$CF_3CF=CH_2$	2,3,3,3-tetrafluoro-1-propene	A2L	4.7 4.5	16,000	75	18.0	62,000	289	500	—
R-1234ze(E)	$CF_3CH=CHF$	trans-1,3,3,3-tetrafluoro-1 - propene	A2L	4.7	16,000	75 76	18.5	65,000	303	800	—
R-1270	$CH_3CH=CH_2$	Propene (propylene)	A3	0.1	1,000	1.7				500	1-4-1
R-1336mzz(E)	$CF_3CH=CHCF_3$	trans-1,1,1,4,4,4-hexafluoro-2-butene	A1	3.0	7,200	48				400	
R-1336mzz(Z)	$CF_3CH=CHCF_3$	Cis-1,1,1,4,4,4-hexafluoro-2-butene	A1	5.4 5.2	13,000	87 84				500	

SI: 1 pound = 0.454 kg, 1 cubic foot = 0.02832 m^3

a. Degrees of hazard are for health, fire, and reactivity, respectively, in accordance with NFPA 704.
b. Reduction to 1-0-0 is allowed if analysis satisfactory to the code official shows that the maximum concentration for a rupture or full loss of refrigerant charge would not exceed the IDLH, considering both the refrigerant quantity and room volume.
~~c. The ASHRAE Standard 34 flammability classification for this refrigerant is 2L, [illegible]~~
~~d.~~ c. Class I ozone depleting substance; prohibited for new installations.
~~e.~~ d. Occupational Exposure Limit based on the OSHA PEL, ACGIH TLV-TWA, the TERA WEEL or consistent value on a time-weighted average (TWA) basis (unless noted C for ceiling) for an 8 hr/d and 40 hr/wk.