

NEW YORK CITY FIRE DEPARTMENT

Notice of Public Hearing and Opportunity to Comment on Proposed Rule

What are we proposing? The Fire Department is proposing to comprehensively update Section 3004-01 of Title 3 of the Rules of the City of New York which regulates carbon dioxide installations, to adopt the latest national and industry standards and to eliminate or update New York City-specific fire safety requirements. These changes are needed because the existing rule is outdated and based on reference industry standards dating from 1984 and 1986.

When and where is the hearing? The Fire Department will hold a public hearing on the proposed rule. The public hearing will take place at 11:00 a.m. on Wednesday, June 14, 2017. The hearing will be in the Fire Department Auditorium at 9 MetroTech Center, Brooklyn, NY 11201. The Auditorium is wheelchair accessible.

How do I comment on the proposed rule? Anyone can comment on the proposed rule by:

- **Website.** You can submit comments to the Fire Department through the NYC Rules website at <http://rules.cityofnewyork.us>.
- **Mail.** You can mail written comments to Code Development Unit, Bureau of Fire Prevention, New York City Fire Department, 9 MetroTech Center, Room 3E2, Brooklyn, NY 11201.
- **Speaking at the hearing.** Anyone who wants to comment on the proposed rule at the public hearing must sign up to speak at the hearing. The time that you can speak may be limited.

Is there a deadline to submit written comments? Yes, you must submit written comments by June 14, 2017.

Do you need assistance to participate in the hearing? You must notify the Bureau of Fire Prevention if you need a sign language interpreter or other reasonable accommodation for a disability at the hearing. Write to us at the address above or telephone us at (718) 999-2042. You must notify us by Tuesday, May 30, 2017.

Can I review the comments made on the proposed rule? You can review the comments made online on the proposed rule by going to the website at <http://rules.cityofnewyork.us>. A few days after the hearing, a record of the hearing and copies of the written comments will be available to the public at the Bureau of Fire Prevention.

What authorizes the Fire Department to make this rule? Sections 489 and 1043 of the New York City Charter, and Sections FC102.6.3 and FC3004 of the New York City Fire Code (Title 29 of Administrative Code of the City of New York) authorize the Fire Department to propose this rule.

Where can I find the Fire Department rules? The Fire Department rules are codified in Title 3 of the Rules of the City of New York.

What rules govern the rulemaking process? The Fire Department must meet the requirements of Section 1043 of the New York City Charter when creating or changing rules. This notice is made according to the requirements of Section 1043(b) of the New York City Charter.

Statement of Basis and Purpose of Proposed Rule

The Fire Code regulates the manufacturing, storage, handling, use and transportation of hazardous materials in New York City, including liquefied carbon dioxide, a compressed gas that is a potential asphyxiant (i.e., suffocation hazard). The fire safety regulations for carbon dioxide installations currently set forth in Section 3004-01 of Title 3 of the Rules of the City of New York are outdated, as they are based on reference industry standards dating from 1984 and 1986.

Carbon dioxide is used for refrigerating and fire extinguishing systems, but the most common use is for carbonation of soft drinks in restaurants and other places of business. Steel containers storing carbon dioxide, pressurized and liquefied to below minus 100 degrees Fahrenheit, are installed in such premises and connected by special piping to the fountains that dispense soft drinks and supply the carbon dioxide needed to carbonate the beverages. Cargo tank trucks periodically refill these containers through a fill connection on the outside of the building that is connected by piping to the storage container. This system is typically self-contained; it is not connected to any building systems other than being plugged into a standard electrical outlet.

After reviewing current industry standards, the Fire Department proposes to repeal and re-promulgate Section 3004-01 in order to reference the relevant provisions of the 2015 International Fire Code, the model code upon which the New York City Fire Code is based and the National Fire Protection Association standard referenced by the International Fire Code, and to eliminate or update the New York City-specific design, installation, operation and maintenance requirements set forth in the rule.

The proposed rule would:

- regulate carbon dioxide beverage dispensing systems storing more than 100 pounds of liquefied carbon dioxide (that is, all but the smallest containers for commercial use for liquefied carbon dioxide);
- require the installation of such systems by a Fire Department certificate of fitness holder;
- eliminate outdated design and installation requirements, such as copper piping, that are no longer approved for use in carbon dioxide beverage dispensing systems, and reference new design and installation standards, including carbon dioxide detection and alarm systems;
- allow installers to electronically file with the Fire Department the report certifying the installation of the system, and require submission of a report if there is a release of carbon dioxide or activation of the carbon dioxide detection and alarm system;

- require “quick checks” of the system at time of delivery, and full inspections on an annual basis; and
- standardize recordkeeping requirements for such systems.

This rule was identified for repeal and re-promulgation in response to a review of the City’s existing rules conducted by the New York City Mayor’s Office of Operations, working with the New York City Law Department and Office of Management and Budget, to reduce regulatory burdens, increase equity, support small businesses, and simplify and update content to help support public understanding and compliance.

The entire proposed rule is underlined, indicating that it is a new rule.

“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 3004-01 of Chapter 30 of Title 3 of the Rules of the City of New York is proposed to be REPEALED and a new § 3004-01 is proposed to be adopted, to read as follows:

§ 3004-01 Use of Carbon Dioxide in Beverage Dispensing Systems

(a) Scope.

- (1) This section sets forth standards, requirements and procedures for the storage, *handling* and use of more than 100 pounds (874 SCF) of carbon dioxide, in liquefied form, in beverage dispensing systems.
- (2) The provisions of this section do not apply to the storage, *handling* and use of carbon dioxide in any *refrigerating system, fire extinguishing system* or portable fire extinguisher, which are regulated by FC 606, 904 and 906, respectively.
- (3) Any other storage, *handling* or use of carbon dioxide in a device, equipment or system shall be submitted for *Department* approval pursuant to FC105.4, and shall be conducted under the personal supervision of a person holding a *certificate of fitness*, as set forth in FC3001.4, if the amount of carbon dioxide being stored, *handled* or used requires a *Department* permit.

(b) General Provisions.

- (1) Applicable standards. Carbon dioxide beverage dispensing systems shall be designed, installed, operated and maintained in compliance with the requirements of FC Chapter 30, this section and:
 - (A) Section 5307 of the International Fire Code (IFC) (2015 edition);
 - (B) Chapter 13 of *NFPA* Standard 55 (2013 edition);

- (C) the equipment manufacturer's design specifications and installation, operation and maintenance instructions; and
 - (D) the *Construction Codes*, as applicable.
- (2) Permit. A permit shall be required for the storage, *handling* and use of carbon dioxide as set forth in FC105.6.
- (3) Supervision. Carbon dioxide beverage dispensing systems shall be supervised as follows:
 - (A) Carbon dioxide beverage dispensing systems shall be installed by a person holding a *certificate of fitness* for that purpose.
 - (B) The filling of a carbon dioxide *container* from any source shall be performed by a person holding a *certificate of fitness* for that purpose.
- (4) Installer certification of installation or repair. For any new or altered carbon dioxide beverage dispensing system using more than 400 pounds (3,496 SCF) of carbon dioxide, and for any carbon dioxide beverage system that is inspected and/or repaired after activation of an emergency alarm or other release of carbon dioxide, the installer shall complete and submit to the *Bureau of Fire Prevention* (by emailing to DistrictOfficeHeadquarters@fdny.nyc.gov) an affidavit in a form approved by the *Department* certifying that the system is in good working order and setting forth the following information, and such other information and documentation as the *Department* may require:
 - (A) New/altered systems:
 - (1) Number and size (capacity) of carbon dioxide storage *container(s)* installed;
 - (2) Location of installation at the premises;
 - (3) Whether the room is provided with mechanical ventilation and/or a carbon dioxide detection and alarm system; and
 - (4) Location of carbon dioxide beverage dispensing system central unit panel and emergency alarm sensors and strobes.
 - (B) Emergency alarm activation/carbon dioxide release:
 - (1) Date/time of system restoration to service;
 - (2) Source/cause of carbon dioxide release; and

(3) System components repaired or replaced.

(c) Design and Installation Requirements.

(1) Compliance with applicable standards. Carbon dioxide beverage dispensing systems shall be designed and installed in accordance with IFC Section 5307, NFPA Standard 55, and any other applicable standards, as set forth in R3004-01(b)(1), including compliance with the following requirements:

(A) Containers designed for permanent storage of low pressure, liquefied carbon dioxide;

(B) Pressure and level indicators at the storage tank and the fill connection that indicate whether the containers have been filled to their design capacity;

(C) Pressure relief devices piped to a safe outdoor location;

(D) Piping systems designed to withstand the effects of expansion, contraction, vibration, physical damage and heat sources;

(E) Materials capable of extended exposure to liquefied carbon dioxide;

(F) Foundation or floor capable of supporting the weight of the carbon dioxide system at full capacity;

(G) Carbon dioxide detection and alarm system capable of detecting and notifying the building occupants of the release of carbon dioxide vapors in excess of the permissible exposure limit, by activating an audible alarm within the room or area, a strobe outside of the room or area, and a signal to the central unit panel; and

(H) Mechanical ventilation, where required.

(2) Additional safety requirements. Carbon dioxide beverage dispensing systems shall additionally be designed and installed in compliance with the following requirements:

(A) Fill connections. Each carbon dioxide storage container shall have its own fill connection and related piping. Fill connection(s) shall be in a lockable box permanently mounted on a wall outdoors. The fill connection and fill vent shall not be located in or above any below-ground spaces or stairwells.

(B) Storage containers. The container(s) storing the carbon dioxide shall be of a design certified as compliant with ASME standards. Storage containers shall be installed at a location readily accessible for servicing and reading of gauges. Storage containers shall not be installed at any location that

would obstruct means of egress, fire protection systems, ventilation systems, or public utility closets or panels. Storage containers shall be installed at or above grade level, where feasible; if installed below grade, a carbon dioxide detection and alarm system must be installed in all instances.

- (C) Testing of piping. All piping joints and other connections shall be tested for leaks at time of installation using a soap solution.
- (D) Dispenser regulators. Soda carbonation dispenser pressure regulators shall be designed to fail in the closed position.
- (E) Approved alarm system. The carbon dioxide detection and alarm system shall be *listed* and *labeled* by a nationally recognized testing laboratory.
- (F) Protection of power supply. Any carbon dioxide detection and alarm system components supplied with electrical power from a wall receptacle (outlet) shall be protected against interruption of power supply by a plug lock, strap or other means of preventing the plug from being accidentally disconnected.

(d) Operational and Maintenance Requirements.

(1) Carbon dioxide beverage dispensing systems shall be operated and maintained in accordance with IFC Section 5307, NFPA Standard 55, and any other applicable standards, as set forth in R3004-01(b)(1), including compliance with the following requirements:

- (A) A warning sign shall be conspicuously posted at the entrance to the room or area containing the storage containers indicating the presence of carbon dioxide and the danger of asphyxiation. If a carbon dioxide detection and alarm system is installed, the warning sign shall read as follows (in lieu of the language set forth in Section 13.2.3.1 of NFPA Standard 55):

“WARNING – CARBON DIOXIDE GAS INSTALLATION – ASPHYXIATION DANGER

A high carbon dioxide (CO2) gas concentration in this area can cause suffocation.

If the CO2 alarm activates, or other reason to believe there is a CO2 leak, DO NOT ENTER ROOM.
Call New York City 911 immediately.”

- (B) An informational sign describing the types of alarms and system defaults shall be posted on the wall adjacent to the central unit panel.

- (2) Additional safety requirements. Carbon dioxide beverage dispensing systems shall additionally be operated and maintained in compliance with the following requirements:
- (A) Periodic quick check of system. A quick check of the carbon dioxide beverage dispensing system shall be conducted by the *certificate of fitness* holder each time the carbon dioxide container is filled, but in any event not less than once a month. The quick check shall consist of a visual inspection of:
- (1) the pressure gauge on the storage *container(s)*, to confirm that the pressure of the liquid carbon dioxide is within normal range;
- (2) system components, to detect any sign of physical damage, frost build-up or other visible evidence of component malfunction;
- (3) the central unit panel, to confirm that the carbon dioxide detection and alarm system is powered and operating properly, including checking for any system faults and activating any system test;
- (4) the required warning sign, to confirm that it is posted, legible and not obstructed; and
- (5) the room or area in which the carbon dioxide storage *container(s)* is installed, to confirm that there are no obvious unsafe conditions, such as storage of items on or against the *container(s)* or piping.
- (B) Annual inspection. A full inspection of the carbon dioxide beverage dispensing system shall be conducted by a *certificate of fitness* holder at least once a year. All *containers*, vent, fill and dispenser piping, and other system components shall be inspected for damage or signs of wear. Any components not in good working order shall be repaired or replaced.
- (C) Periodic piping replacement. All vent, fill and dispenser piping shall be replaced at least once every eight years.
- (D) User safety training. At time of installation of a carbon dioxide beverage dispensing system, and at least once a year thereafter, the installer or other *certificate of fitness* holder shall verbally and in writing communicate the following carbon dioxide safety information to the *owner* and/or other responsible persons at the premises, to ensure that they are aware of the hazards associated with the system and understand how to safely operate and monitor the system:
- (1) Asphyxiation and extreme temperature hazards associated with carbon dioxide release;

- (2) Identification of each of the carbon dioxide beverage dispensing system components, including fill box, piping, containers, central unit panel, and carbon dioxide emergency alarm and strobe, and a basic description of system operation;
- (3) Importance of keeping system components free from physical damage or obstruction, including damage or obstruction from stored items;
- (4) Importance of immediately reporting to the *certificate of fitness* holder any damage to, or malfunction of, the system and ensuring that the system is inspected, and if necessary, repaired, on an expedited basis; and
- (5) Importance of immediately reporting and acting upon any actual release of carbon dioxide as set forth in R3004-01(d)(3).

(3) Notification of carbon dioxide leak. Upon activation of the carbon dioxide beverage dispensing system emergency alarm or other indication of an actual accidental release of carbon dioxide from the beverage dispensing system, the following steps must be taken:

- (A) immediately report the emergency to New York City 911;
- (B) keep all persons away from the carbon dioxide installation and evacuate any below-grade area;
- (C) notify the *certificate of fitness* holder;
- (D) discontinue use of the carbon dioxide beverage dispensing system until a qualified installer has certified that it has been restored to good working order, by completing an affidavit pursuant to R3004-01(b)(4).

(e) Recordkeeping.

(1) The owner or *certificate of fitness* holder shall maintain on the premises in accordance with FC107 the following documentation:

- (A) A copy of the Installer's Affidavit for new and altered systems, as set forth in R3004-01(b)(4), including the periodic replacement of system piping;
- (B) A copy of the Installer's Affidavit for any emergency alarm activation/ carbon dioxide release;
- (C) A tag or other record of each quick check and annual inspection indicating:

- (1) the date of the inspection;
- (2) whether the system is in good working order, and, if not, any conditions that require correction, and, if so, the date the condition was corrected and by whom; and
- (3) the name and certificate number of the *certificate of fitness* holder who performed the inspection;
- (D) The names and titles of the responsible person(s) at the premises trained in the use of the system; and
- (E) A copy of the manufacturer's manual for the carbon dioxide beverage dispensing system.

3004-01 (5/2/17 publication)

**NEW YORK CITY LAW DEPARTMENT
DIVISION OF LEGAL COUNSEL
100 CHURCH STREET
NEW YORK, NY 10007
212-356-4028**

**CERTIFICATION PURSUANT TO
CHARTER §1043(d)**

RULE TITLE: Use of Carbon Dioxide in Beverage Dispensing Systems

REFERENCE NUMBER: 2017 RG 030

RULEMAKING AGENCY: Fire Department

I certify that this office has reviewed the above-referenced proposed rule as required by section 1043(d) of the New York City Charter, and that the above-referenced proposed rule:

- (i) is drafted so as to accomplish the purpose of the authorizing provisions of law;
- (ii) is not in conflict with other applicable rules;
- (iii) to the extent practicable and appropriate, is narrowly drawn to achieve its stated purpose; and
- (iv) to the extent practicable and appropriate, contains a statement of basis and purpose that provides a clear explanation of the rule and the requirements imposed by the rule.

/s/ STEVEN GOULDEN
Acting Corporation Counsel

Date: May 1, 2017

**NEW YORK CITY MAYOR'S OFFICE OF OPERATIONS
253 BROADWAY, 10th FLOOR
NEW YORK, NY 10007
212-788-1400**

**CERTIFICATION / ANALYSIS
PURSUANT TO CHARTER SECTION 1043(d)**

RULE TITLE: Use of Carbon Dioxide in Beverage Dispensing Systems

REFERENCE NUMBER: FDNY-14

RULEMAKING AGENCY: Fire Department

I certify that this office has analyzed the proposed rule referenced above as required by Section 1043(d) of the New York City Charter, and that the proposed rule referenced above:

- (i) Is understandable and written in plain language for the discrete regulated community or communities;
- (ii) Minimizes compliance costs for the discrete regulated community or communities consistent with achieving the stated purpose of the rule; and
- (iii) Does not provide a cure period because it does not establish a violation, modification of a violation, or modification of the penalties associated with a violation.

/s/Guenevere Knowles
Mayor's Office of Operations

May 1, 2017
Date