


CITY AND COUNTY OF DENVER		POLICY	DENVER FIRE DEPARTMENT
Subject:	CARBON DIOXIDE (CO <sub>2</sub> ) SYSTEMS USED IN BEVERAGE DISPENSING APPLICATIONS		
References:	2015 International Fire Code (IFC), 2016 Denver Fire Code Amendments, 2016 NFPA 55		
Approved:			Manuel Almaguer, Division Chief, Fire Prevention Division
Number:	IFC 5307	Effective Date: <b>January 1, 2016</b> Revision Date: <b>October 1, 2017</b>	Page 1 of 12

This policy is meant to provide basic information for most common conditions and situations related to the use of Carbon Dioxide (CO<sub>2</sub>) gases in beverage dispensing applications. Carbon Dioxide (CO<sub>2</sub>) gases present an asphyxiation and toxic hazard due to oxygen displacement. In any given occupancy, all other Fire Code requirements will be enforced. The Fire Inspector will address these during a premise inspection. Questions can be addressed by contacting the Denver Fire Prevention Division at 720-913-3474. Walk-in hours are Monday-Friday, 7:00 a.m. to 9:30 a.m. ONLY at 745 W. Colfax Ave., 1<sup>st</sup> Floor.

## I. SCOPE

This policy covers the installation, maintenance, operation and permitting requirements as they pertain to the use of Carbon Dioxide (CO<sub>2</sub>) compressed gas systems with more than 100 pounds (45.4 kg) of Carbon Dioxide (CO<sub>2</sub>) or any system using any amount of Carbon Dioxide (CO<sub>2</sub>) below grade used in beverage dispensing applications in new and existing facilities within the City and County of Denver.

Existing Carbon Dioxide (CO<sub>2</sub>) compressed gas systems used in beverage dispensing applications that are located within existing buildings need to be retrofitted and modified per section 1107.1.1 in the 2016 Denver Fire Code. As of January 1, 2018, legal action will be taken for all businesses not in compliance.

## II. DEFINITIONS

**Asphyxiation:** to lose consciousness by impairing normal breathing, to suffocate or smother

**Dewar:** a vacuum flask that holds a cryogenic or liquefied gas

**Carbon Dioxide (CO<sub>2</sub>) Detector:** a device to measure the concentration of CO<sub>2</sub> in the air

**Carbon Dioxide (CO<sub>2</sub>) Emergency Alarm Control Unit:** a system component that monitors inputs and controls outputs through various types of circuits

**Indoor use of Carbon Dioxide (CO<sub>2</sub>):** Rooms or areas sheltered from the weather with a roof and enclosed on two or more sides with a solid wall. Subject to review by the code official, rooms or areas without a roof and with solid walls and doors on all sides, may be considered an indoor installation.

**Liquid Carbon Dioxide (CO<sub>2</sub>) Systems:** An assembly of equipment consisting of one or more carbon dioxide supply containers, interconnecting piping, pressure regulators, and pressure relief devices

**PEL:** Permissible Exposure Limit for CO<sub>2</sub> gas is 5,000 PPM (0.5%) Time Weighted Average (TWA) @ 8 hours a day, 40 hours per week

**STEL:** Short-Term Exposure Limit for CO<sub>2</sub> is 30,000 PPM (3.0%) for less than 15 minutes

**IDLH:** Immediately Dangerous to Life & Health for CO<sub>2</sub> is 40,000 PPM (4.0%)

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### III. PERMITS

#### A. CONSTRUCTION PERMITS

Construction permits are required to install, repair damage to, abandon, remove, place temporarily out of service or close or substantially modify Carbon Dioxide (CO<sub>2</sub>) systems with more than 100 pounds (45.4 kg) of Carbon Dioxide (CO<sub>2</sub>) in use or any system using any amount of Carbon Dioxide (CO<sub>2</sub>) below grade used in beverage dispensing applications.

A separate tank installation permit is required for bulk tank installations over 2,000 pounds.

Denver Fire Department, Fire Prevention Division Fire Protection Engineers must review all Carbon Dioxide (CO<sub>2</sub>) systems used in beverage dispensing applications including bulk tanks over 2,000 pounds. Upon approval by the Fire Prevention Division Fire Protection Engineers fire construction permits will be issued.

To obtain required fire construction permit(s), the applicant must submit all required documentation at:

Development Services  
Wellington Webb Municipal Building  
201 W. Colfax Ave., 2<sup>nd</sup> floor Commercial Login Counter  
Denver, Colorado 80204

Provide a Statement of Valuation and Plan Review Contact List that can be obtained by visiting the City and County of Denver website [www.denvergov.org](http://www.denvergov.org).

Applicable plan review and permit fees shall apply.

Construction permits shall be issued to licensed contractors unless otherwise approved by the Fire Official.

Construction drawings and specifications shall be complete and of sufficient clarity to indicate the entire work proposed and show in detail that the Carbon Dioxide (CO<sub>2</sub>) system conforms to the provisions of the Fire and Building Codes and relevant laws, ordinances, rules, and regulations. Each set of drawings and specifications shall, at a minimum, contain the following information, architectural, structural, mechanical, electrical drawings, specifications, and analysis:

1. Exact address, legal description and location of the work performed.
2. Name and address of the owner.
3. Name and address of the person or firm responsible for the preparation of the drawings and specifications. If after review of the construction drawings and specifications, the Fire Official determines that the proposed Carbon Dioxide (CO<sub>2</sub>) system is inadequately designed, the Fire Official may require that the construction drawings and specifications bear the seal of a licensed Colorado professional engineer.

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4. Two complete sets of construction documents showing the construction of architectural, structural, mechanical, plumbing, and electrical arrangements.
5. Two copies of specifications or notes that clearly describe the type, quality and finish of materials and the method of assembly, erection, and installation of equipment to be installed with proper reference to accepted standards. Two copies of manufactures' specification sheets and equipment listing sheets for all equipment and devices associated with the Carbon Dioxide (CO<sub>2</sub>) system.
6. Except for entirely interior installations, a plot plan showing the location of the proposed construction (i.e., tanks) and the location of every adjacent existing building on the property, roads, walks, utilities and other site improvements, all property lines, streets, alleys, easements, and other public areas.
7. Bulk tank installations over 2,000 pounds will require an engineered structural foundation with a separate tank installation permit. Two complete sets of structural drawings, specifications, and analysis (calculations) shall be provided and shall bear the seal of a licensed Colorado professional engineer.

#### **B. OPERATIONAL PERMITS**

1. Operational permits shall be issued upon approval, issuance, and final inspections of required construction fire permits.
2. An annual operational permit shall be obtained from the Denver Fire Department's Fire Prevention Division for Carbon Dioxide (CO<sub>2</sub>) systems used in beverage dispensing applications as defined in the scope.
3. A separate annual compressed gas storage/use permit will be required for 6,000 cubic feet (686 pounds) or more of Carbon Dioxide (CO<sub>2</sub>) as an "Inert Gas." (1 pound of CO<sub>2</sub> = 8.74 cu/ft)

Operational permits shall be posted on site. To obtain required operational permit(s), the Business owner or Company Representative must complete and sign the Carbon Dioxide (CO<sub>2</sub>) Systems Used in Beverage Dispensing Applications Permit application.

Make check payable to: **Denver Manager of Finance**

Mail-in to: Denver Fire Department  
Fire Prevention Division - Permits  
745 W. Colfax Avenue  
Denver, CO 80204

Walk-in permits: Monday – Friday, **7:00 a.m. to 9:30 a.m. ONLY** at 745 W. Colfax Ave., 1<sup>st</sup> floor

**PERMIT COST** - See Permit Fee Table at [www.denvergov.org/Fire](http://www.denvergov.org/Fire) for current fees.

#### **IV. CARBON DIOXIDE (CO<sub>2</sub>) SYSTEMS USED IN BEVERAGE DISPENSING APPLICATIONS REQUIREMENTS**

**Specifics and Conditions (Section 5307 in the 2016 Denver Fire Code):**

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- A. Equipment.** The storage, use, and handling of carbon dioxide shall be in accordance with the Compressed Gases Chapter in the IFC and the applicable requirements of NFPA 55, Chapter 13. All equipment utilized in compressed gas systems shall be compatible with the intended gas and use.
- 1. Containers, cylinders, and tanks.** Gas supply containers, cylinders and tanks shall be designed, fabricated, tested, labeled, and installed per manufactures' specifications and shall be maintained in accordance with the regulations of DOTn 49 CFR, Parts 100-185 or the ASME Boiler and Pressure Vessel Code, Section VIII.
    - a. Location.** Location of gas supply containers, cylinders, and tanks, inside or outside the building, shall be at an approved location.
    - b. Security.** Gas supply containers, cylinders and tanks shall be secured in an approved manner to prevent overturning. Containers, cylinders, and tanks located outside shall be secured and safeguarded against tampering and protected from physical damage if exposed to vehicle traffic.
    - c. Design and construction.** Bulk tank installations over 2,000 pounds will require an engineered foundation and construction permit per the Denver Building Code.
  - 2. Piping systems.** Piping, tubing, fittings, valves, and pressure regulating devices shall be designed and installed in accordance with approved standards and manufacturers' recommendations.
    - a. Piping, tubing, and hoses.** Piping, tubing, and hose materials shall be compatible with carbon dioxide and rated for the temperatures and pressures encountered in the system. All hoses and tubing used in carbon dioxide service shall be designed for a bursting pressure of at least four times their design pressure. PVC/ABS and other types of rigid plastic piping are not approved materials. Acceptable piping for carbon dioxide shall be the following:
      1. Stainless steel A269 grade, which is either seamless or welded drawn over mandrel
      2. Copper K grade, hard drawn seamless
      3. Copper ACR grade (1/2 inch outside diameter or less) annealed seamless
      4. Plastic/polymer materials rated for use with carbon dioxide and compliant with Code of Federal Regulations Title 21 FDA Part 177 Indirect Food Additives Polymers
      5. Additional approved piping, tubing and hoses found in the Compressed Gas Association (CGA) standards for carbon dioxide
    - b. Support.** Gas piping shall not be attached or supported by any electrical light supports or wiring.
    - c. Identification.** Markings for carbon dioxide (CO<sub>2</sub>) piping systems shall consist of the content's name (carbon dioxide or CO<sub>2</sub>) and direction-of-flow arrow. Markings shall be provided at each valve; at wall, floor, or ceiling penetrations; at each

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change of direction; and at not less than every 20 feet or fraction thereof throughout the piping run.

3. **Fittings, joints, and connections.** Fittings, joints, and connections shall be subject to the approval of the fire and building departments.
  - a. **Fittings and joints between gas supply containers and automatic shutoff valve.** Joints and fittings on the supply piping or tubing between the CO<sub>2</sub> supply source and the automatic system shutoff valve shall be threaded, compression or welded.
  - b. **Unused connections.** Unused piping or tubing connected to the supply system shall be capped or plugged. A closed valve will not be allowed in lieu of a cap or plug.
  - c. **Concealed connections.** All fittings and joints shall be exposed and located adjacent to the supply source or points of use and shall be protected by a detector.
4. **Valves.** Piping systems shall be provided with valves as follows:
  - a. **Pressure relief valves.** Pressure relief valves shall be provided and piped to the outdoors.
  - b. **System shutoff valve.** An automatic system shutoff valve shall be provided as near to the supply pressure regulator as possible and shall be designed to fail to a closed condition closing on loss of electrical power to the valve and gas detection. Automatic shutoff valves shall be designed and located so that all phases (i.e., gas, liquid and solid) of a carbon dioxide (CO<sub>2</sub>) will not interfere with the operation of the device. Automatic system shutoff valve shall have components that indicate the valve operating position, open or closed.
  - c. **Appliance shutoff valves.** Each appliance shall be provided with a shutoff valve within 3 feet of the appliance. All shutoff valves shall be capable of being locked or tagged in the closed position for servicing.
  - d. **Check valves.** One-way flow check valves shall be installed at the most downstream end of copper runs that are used for beverage consumption.
  - e. **Accessibility and identification.** Valves and controls shall be readily accessible at all times. Normal and emergency system shut-off valves shall be clearly identified. All valves shall be designed or marked to indicate clearly whether it is open or closed.
5. **Venting.** Venting of gases shall be directed to an approved location outside the building. Insulated liquid carbon dioxide systems shall have pressure relief devices vented in accordance with NFPA 55.
  - a. **Beverage pumps.** Beverage pumps located in walk-in coolers or below grade shall be vented to the outside.

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- B. Protection from damage.** Carbon dioxide systems shall be installed so the supply tanks, cylinders, piping, and fittings are protected from damage by occupants or equipment during normal facility operations.
- C. Required protection.** Where carbon dioxide supply tanks, cylinders, piping, and equipment are located indoors, rooms or areas containing carbon dioxide supply tanks, cylinders, piping and fittings and other areas where a leak of a carbon dioxide system can collect shall be provided with either ventilation or an emergency alarm system as follows:
- 1. Ventilation.** Mechanical ventilation shall be in accordance with the *International Mechanical Code* and shall comply with all of the following:
    - a. Mechanical ventilation in the room or area shall be at a rate of not less than 1 cubic foot per minute per square foot [0.00508 m<sup>3</sup>/(s • m<sup>2</sup>)].
    - b. Exhaust shall be taken from a point within 12 inches (305 mm) of the floor.
    - c. The ventilation system shall be designed to operate at a negative pressure in relation to the surrounding area.
    - d. Ventilation shall run continuously or be activated by a sensor or detector to maintain an atmosphere of less than 5,000 ppm.
    - e. A mechanical permit is required per the Denver Building Code.
  - 2. Emergency alarm system.** An emergency alarm system shall comply with all of the following:
    - a. Continuous gas detection shall be provided to monitor areas where carbon dioxide (CO<sub>2</sub>) can accumulate. Detection equipment shall be provided to indicate carbon dioxide (CO<sub>2</sub>) levels at each point of use and at each supply tank area/room.
    - b. Detectors shall be:
      - i. listed or approved devices
      - ii. permanently mounted
      - iii. installed at a height of between 12 - 24 inches above the floor or as approved by the fire code official
      - iv. connected to building electrical by either hardwiring (requiring a separate electrical permit from the building department) **or** to a non-spliced cord and plug connection that is protected from accidental disconnection/damage **or** to a Carbon Dioxide (CO<sub>2</sub>) Emergency Alarm Control Unit
      - v. auto calibrating and self “zeroing” devices are not permitted unless they can be zeroed and spanned
      - vi. located within manufacturers specified detection range for each point of use and supply tank location

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- vii. listed to operate under environmental conditions such as temperature, humidity, and velocity variations
- c. Alarm set points shall be set at:
  - i. 5,000 PPM (0.5%) Time Weighted Average (TWA) – Self re-setting (non-latching) alarm
    - a) Audible notification for employees only in approved locations with instructional signage
  - ii. 15,000 PPM (1.5%) – Latching Alarm
    - b) Audible notification for employees only in approved locations with instructional signage
    - c) Requires a service company or approved trained employees to investigate, repair and reset
  - iii. 30,000 PPM (3.0%) – Latching Alarm
    - a) Initiate **all** amber strobes and audible horns provided in the vicinity of each interior supply container, cylinder or tank and at each point of use. Additional amber strobes and audible horns shall be placed at the entrances to below grade locations, confined spaces including small volume rooms, and at walk-in coolers. The notification devices shall be rated a minimum of 80cd for a visible effect and 75 dBA for an audible effect and shall be mounted per NFPA 72 requirements (80 inches minimum to 96 inches maximum above finished floor). Notification devices shall be listed to operate in special environments, such as outdoor versus indoors, high or low temperatures, and high humidity.
    - b) Activation of automatic system shutoff valve
    - c) Evacuate room/area and call 911
    - d) Provide an annunciator panel/unit that annunciates the location of the CO<sub>2</sub> detection zone in alarm by means of a directory LED (light-emitting diode) point display or LCD (liquid crystal display) to assist the responding fire fighters. Annunciator panel/unit shall be installed in an approved location outside of the potentially CO<sub>2</sub> contaminated areas.
    - e) Provide a graphic floor plan map of the area protected by the CO<sub>2</sub> emergency alarm system that is permanently mounted adjacent to the annunciator panel/unit or Carbon Dioxide (CO<sub>2</sub>) Emergency Alarm Control Unit. Plans shall be of durable construction, easily readable in normal lighting, protected by a smooth, transparent, plastic surface and shall indicate the location of supply tank, points of use, and CO<sub>2</sub> detectors. The graphic map shall state “You Are Here” and be properly oriented to assist the responding fire fighters.
    - f) Provide a labeled and secured alarm silencing switch adjacent to the annunciator panel/unit that shall only de-activate the audible notification appliances (amber strobes shall remain on and automatic system shutoff valve shall remain closed) until the system is manually reset.

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- g) Alarm silencing can only be performed by fire department personnel. Manual reset can only be performed by a qualified service company or fire department personnel.
- h) Alarm Signal\*

\*In buildings with a monitored sprinkler or fire alarm/detection system, the carbon dioxide (CO<sub>2</sub>) emergency alarm system shall be connected to the building fire alarm control panel. This shall include a monitor module for a high alarm (30,000 ppm or 3.0%), a LED hazmat CO<sub>2</sub> alarm zone on the building annunciator, a non-latching supervisory CO<sub>2</sub> maintenance/testing bypass switch, and modified building graphic map indicating the location of the CO<sub>2</sub> emergency alarm control unit, annunciator panel/unit, CO<sub>2</sub> detectors and CO<sub>2</sub> supply tank. Building fire alarm notification devices shall not activate on this CO<sub>2</sub> hazmat alarm. The central station monitoring shall receive and dispatch a CO<sub>2</sub> hazmat alarm. A fire alarm permit is required per the Denver Building Code.

- d. Signage shall be required adjacent to each horn/strobe as follows:
  - i. *Outside the supply tank room or point of use area/room: “**DO NOT ENTER WHEN LIGHT IS FLASHING – CARBON DIOXIDE LEAK DETECTED – EVACUATE IMMEDIATELY AND CALL 911**”*
  - ii. *Inside the supply tank room or point of use area/room: “**FLASHING LIGHT MEANS CARBON DIOXIDE LEAK DETECTED – EVACUATE IMMEDIATELY AND CALL 911**”*
  - iii. The sign shall have a minimum 1-inch block lettering with a minimum ¼-inch stroke. The sign shall be on a contrasting surface of black on yellow and shall be of durable construction.
  - iv. NFPA 704 placards for Simple Asphyxiants shall also be provided at the main entrance to supply tank rooms, areas, or confined spaces.
- e. Carbon Dioxide (CO<sub>2</sub>) Emergency Alarm Control Unit shall be:
  - i. listed or approved
  - ii. used as the required annunciator panel/unit and silencing switch
  - iii. connected to building electrical by either hardwiring (requiring a separate electrical permit from the building department) or non-spliced cord and plug connection that is visible from control unit and is labeled and protected from accidental disconnection or damage
  - iv. labeled and installed in an approved location outside of the potentially CO<sub>2</sub> contaminated areas and shall be secured from unauthorized access. Buildings with a fire department key box can secure the control unit with a lockable cover whereas all other covers shall be secured with an approved breakable tie or wire. Subject to field approval.



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f. Wiring shall be:

- i. Wiring diagrams shall be provided for all initiating devices and notification appliances.
- ii. Pathway wiring, cable, and equipment shall be in accordance with 2017 NFPA 70, Article 760 and 770, as applicable.
- iii. Emergency alarm circuits shall be installed in a neat workmanlike manner. Cables and conductors installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable will not be damaged by normal building use. Such cables shall be supported by straps, staples, cable ties, hangers, or similar fittings designed and installed so as not to damage the cable. The installation shall also comply with Article 300.4(D).
- iv. Design shall account for voltage-drops for notification appliance circuits.

**D. Transfilling.** Filling and transfilling of gases between storage containers, cylinders and tanks and delivery vehicles shall be performed by qualified personnel using equipment and operating procedures in accordance with CGA P-1. Interior storage containers, cylinders and tanks shall be filled via remote fill ports on the exterior of the building at grade level. Exterior remote fill ports shall be fitted with a vent line to the outside. Delivery personnel shall have access to interior storage areas to inspect valves and piping prior to initiating filling operations. Interior supply containers, cylinders and tanks shall be filled via a remote fill port on the exterior of the building positioned 3 feet from any man or overhead door and 36 inches above grade and 10 feet from air intakes and stairwells that go below grade. If the interior supply tank exceeds 1,000 pounds the fill connection port shall be positioned 10 feet from exits (man doors and overhead doors) and air intakes and 2 feet from all other openings (windows).

**E. Inspection and testing.** All piping installations shall be visually inspected, calibrated, and pressure tested to determine that the materials, design, fabrication, and installation practices comply with the requirements of the IFC.

**1. Records.** A written record of all alarm activations/resets, required inspections, testing, calibration, and maintenance shall be maintained in a log book on the premises containing the three (3) most current years of records and be available for review by fire inspection personnel.

**a. Required inspections and testing.** All piping installations shall be tested and inspected as follows:

- i. **Acceptance testing.** Appliances and equipment shall not be placed in operation until after the piping system has been checked for leakage and detectors, notification devices and automatic shutoff valves have been tested

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by a qualified service company. All piping installations shall be visually inspected and pressure tested prior to initial operation. The test pressure downstream of the pressure regulator shall be not less than 110% of the operating pressure. Joints shall be checked with a bubble-forming solution. Acceptance testing is required to be witnessed by Fire and/or Building Code Officials. Provide an inspection report to the fire and/or building officials for the piping and joint visual inspection and pressure test.

- ii. **Daily inspections.** All detectors and alarms shall be visibly inspected daily. These inspections are permitted to be conducted by trained employees.
  - iii. **Monthly inspections.** All storage vessels, piping, and appurtenances shall be visibly inspected monthly. These inspections are permitted to be conducted by trained employees.
  - iv. **Semi-annual inspections.** Systems shall be visually inspected, gas detectors calibrated per manufacturer specification, alarms tested, and tested for leaks semi-annually by a qualified service company.
  - v. **Alterations and repair.** In the event alterations, repairs or additions are made, the affected piping shall be retested.
- b. Calibration.** Detectors shall be checked for accuracy, calibrated to a reference gas concentration, and span reset.
- c. Pressure testing.** Pipe joints shall be exposed for examination during the test.
- i. **Test medium.** The test medium shall be air, nitrogen, carbon dioxide, or an inert gas.
  - ii. **Section testing.** Piping systems shall be permitted to be tested as a complete unit or in sections. A valve shall not be subjected to the test pressure unless it can be determined that the valve, including the valve-closing mechanism, is designed to safely withstand the test pressure.
  - iii. **Regulators and valve assemblies.** Regulator and valve assemblies fabricated independently of the piping systems in which they are to be installed shall be permitted to be tested with inert gas or air at the time of fabrication. Test records shall be maintained.
  - iv. **Test preparation.** All joints and fittings shall be exposed for examination during and after the test.
    - a) **Pipe clearing.** Prior to testing, the interior of the pipe shall be cleared of all foreign material.
    - b) **Appliance and equipment isolation.** Appliances and equipment that are not to be included in the test shall be isolated from the piping by

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closing the appliance shutoff valve.

**c) Test pressure measurement.** Test pressure shall be measured with a pressure-measuring device designed and calibrated to read, record, or indicate a pressure loss caused by leakage during the pressure test period. The source of pressure shall be isolated before the pressure tests are made. Mechanical gauges used to measure test pressures shall have a range such that the highest end of the scale is not greater than five times the test pressure.

**d) Test pressure.** The test pressure downstream of the pressure regulator shall be not less than 110% of the operating pressure. Where the test pressure exceeds 125 psig (862 kPa gauge), the test pressure shall not exceed a value that produces a hoop stress in the piping greater than 50 percent of the specified minimum yield strength of the pipe or tubing. Pressures shall be adjusted smoothly and slowly to avoid pressure spikes.

**v. Test duration.** The test duration shall be not less than 10 minutes.

**vi. Visual inspection and cleaning.** After testing is complete and the pressure is reduced to at or below operating pressure, all joints shall be cleaned of bubble forming solution and visually inspected.

**vii. Detection of leaks and defects.** The piping system shall withstand the test pressure specified without showing any evidence of leakage or other defects. Any reduction of test pressures as indicated by pressure gauges shall be deemed to indicate the presence of a leak.

**viii. Corrections.** Where leakage or other defects are located, the affected portion of the piping system shall be repaired or replaced and retested.

**F. 5307.8 Training.** All employees shall receive annual training in hazard identification, physical properties, inspection, and emergency procedures. Training records shall be maintained on site and be available to fire inspectors upon request.

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## **CARBON DIOXIDE (CO<sub>2</sub>) SYSTEMS USED IN BEVERAGE DISPENSING APPLICATIONS PERMIT APPLICATION**

THIS FORM SHALL BE COMPLETED AND SIGNED BY BUSINESS OWNER OR A REPRESENTATIVE OF THE PROPERTY OWNER APPLYING FOR THE PERMIT(S).

### **PLEASE MAKE CHECKS PAYABLE TO MANAGER OF FINANCE**

NAME OF BUSINESS: \_\_\_\_\_

MAILING ADDRESS: \_\_\_\_\_ CITY, STATE, ZIP \_\_\_\_\_

PERMIT SITE ADDRESS: \_\_\_\_\_ DENVER, CO. ZIP \_\_\_\_\_

CONTACT NAME: \_\_\_\_\_

CONTACT PHONE NUMBER: \_\_\_\_\_ E-MAIL: \_\_\_\_\_

GAS SUPPLY COMPANY NAME: \_\_\_\_\_

COMPANY PHONE NUMBER: \_\_\_\_\_ E-MAIL: \_\_\_\_\_

TYPE OF CO<sub>2</sub> STORAGE CONTAINER(S): \_\_\_\_\_

TOTAL QUANTITY OF CO<sub>2</sub> GAS ON SITE: \_\_\_\_\_

LOCATION OF CO<sub>2</sub> GAS STORAGE (PROVIDE DIAGRAM): # OF AREAS \_\_\_\_\_

(CHECK ALL THAT APPLY)

INDOOR \_\_\_\_\_ OUTDOOR \_\_\_\_\_ ENCLOSED ROOM \_\_\_\_\_ ABOVE GRADE \_\_\_\_\_ BELOW GRADE \_\_\_\_\_

NUMBER AND DESCRIPTION OF POINTS OF USE (PROVIDE FLOOR PLAN): \_\_\_\_\_

I UNDERSTAND THAT DENVER FIRE PREVENTION DIVISION PERSONNEL WILL CONDUCT A SITE INSPECTION, AND IF THE INSTALLATION DOES NOT COMPLY WITH THE DENVER FIRE CODE, THE PERMIT MAY BE REVOKED WITHOUT A REFUND.

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

**END OF DOCUMENT**

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