



## **CARBON DIOXIDE (CO<sub>2</sub>) BEVERAGE DISPENSING**

**Royse City Fire Department - Fire Marshal's Office**  
305 N Arch St. • Royse City, TX 75189 • Phone: 972.524.4819  
Website: <http://www.roysecity.com/departments/fire/>  
Email: [rcfd@roysecity.com](mailto:rcfd@roysecity.com)

These guidelines are to be followed when a Carbon Dioxide (CO<sub>2</sub>) system used in beverage dispensing applications is moved, installed, or otherwise added, within the City of Royse City.

All Carbon Dioxide system requirements for the purpose of these guidelines and any other guidelines or requirements of the Royse City Fire Marshal's Office shall conform to the 2018 International Fire Code, as adopted and amended by Royse City.

These guidelines do not replace, nor supersede any codes and/or ordinances adopted by Royse City, or determinations and positions of the Royse City Fire Marshal's Office.

### **General Requirements**

- ❖ Carbon dioxide systems with more than 100 pounds of carbon dioxide used in beverage dispensing applications shall obtain a permit from the Fire Marshal's Office.

### **Equipment**

- ❖ The storage, use, and handling of liquid carbon dioxide shall be in accordance with this guideline as outlined in the 2018 International Fire Code Chapter 53 and the applicable requirements of NFPA 55, Chapter 13. Insulated liquid carbon dioxide systems shall have pressure relief devices vented in accordance with NFPA 55.

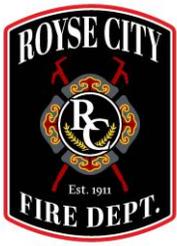
### **Protection from Damage**

- ❖ Carbon Dioxide systems shall be installed so the storage tanks, cylinders, piping and fittings are protected from damage by occupants or equipment during normal facility operations.

### **Required Protection**

- ❖ Where carbon dioxide storage tanks, cylinders, piping and equipment are located indoors, rooms or areas containing carbon dioxide storage tanks, cylinders, piping and fittings and other areas where a leak of carbon dioxide can collect shall be provided with either ventilation or a gas detection / emergency alarm system as outline below:
  - **Ventilation**
    - Mechanical ventilation shall be in accordance with the International Mechanical Code and shall comply with all of the following:
      - 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>)] and shall be constantly in operation.
      - Exhaust shall be taken from a point within 12 inches (305 mm) of the floor.
      - The ventilation system shall be designed to operate at a negative pressure in relation to the surrounding area.

**Failure to comply with guidelines and submittal requirements may result in additional fees**



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- **Gas Detection / Emergency Alarm System**

- A gas detection / emergency alarm system shall comply with all of the following:
  - Where ventilation is not provided in accordance with 5307.3.1, continuous gas detection shall be provided to monitor areas where carbon dioxide can accumulate.
  - CO2 sensors shall be provided within 12 inches of the floor of the area where the gas is expected to accumulate and/or other approved locations.
  - The system shall activate an audible and visual supervisory alarm at a normally attended location upon detection of a CO2 concentration of 5,000 ppm.
  - The system shall activate an audible and visual alarm within the room or the immediate area where the system is installed upon detection of a CO2 concentration of 30,000 ppm.

### **Submittal Requirements**

- ❖ Submit Fire Permit Application
- ❖ Submit Plans in PDF format to include:
  - Site plan and/or floor plan of the installation
  - Location of containers in relation to all equipment, building openings, and all *means of egress*
  - Location of alarm detection system and equipment to include monitors, horns and strobes
- ❖ Submit System Specifications to include:
  - Total quantity of liquid CO2 in pounds at *normal temperature and pressure*
  - Manufacturer specifications
  - Details of container venting or alarm detection system and equipment
  - Seismic support for containers

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### **Inspection Requirements**

- ❖ Operational test under normal conditions and alarm conditions at 5,000 and 30,000 ppm.
- ❖ Call or email our office for inspection when installation is completed and prior to release of Certificate of Occupancy.

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Updated: 3/2023