FIRE PREVENTION AND
COMMUNITY RISK REDUCTION
102 Remington St
Fort Collins, CO 80524
(970) 416-2891

CARBON DIOXIDE BEVERAGE DISPENSING
PERMIT SUBMITTAL CHECKLIST

Submittal Process: The Following items are required for a Carbon Dioxide (CO_2) Beverage Dispensing Plan Review submittal. Failure to provide the following may require a Review Denial or Resubmittal. Not all listed below will be required for every project, please provide all that apply per project. *

Drawings Requirements:
Electronic plans in .pdf format. Please submit files in an unlocked and unsecured state for plan review.
International Fire Code requires a Construction Permit for the installation or modification of CO_2 Beverage Dispensing System utilizing more than 100 pounds of CO_2. An Operational Permit is required therefore after.

CONTRACTOR INFO
- ✓ Qualified Individual – Individuals or companies shall have a current certificate from the manufacturer for the brands in which they are designing and/or installing. Note that this training needs to demonstrate knowledge, skills, and abilities for sensor calibration for the detection equipment installed and the specific hazards present.

CODE ANALYSIS
- ✓ 2024 International Fire Code
- ✓ National Fire Protection Association (NFPA) 55 2023 edition
- ✓ Written job description-scope of work

PLANS
- ✓ Floor plan and area identification
- ✓ Location(s) of all means of egress (exit)
- ✓ Emergency Plan per 2024 IFC Chapter 4 and NFPA 55 Chapter 4
- ✓ Full equipment list
- ✓ Location of all equipment that is being monitored by the gas detection system
- ✓ Location of the container(s)
- ✓ Container(s) size
- ✓ Hose line routing
- ✓ Detector's locations
- ✓ Fill locations
- ✓ All gas detection systems shall be permanently connected to the building electrical power supply or shall be permitted to be cord connected to an unswitched receptacle using an approved restraining means that will secure the plug to the receptacle.
- ✓ Emergency and standby power. Standby or emergency power shall be provided, or the gas detection system shall initiate a trouble signal at an approved location if the power supply is interrupted.

SYSTEM INFORMATION
- ✓ Make and model of tanks
- ✓ Gas sensors and gas detection systems shall not be connected to fire alarm systems

- ✓ Clarify pipe type include make/model; ensure it is suitable for gaseous/liquid CO_2 service
- ✓ Provide fill box and vent location and routing tank
- ✓ Provide gaseous CO_2 supply line from bulk tank to the 'bag in box' soda syrup containers
- ✓ Provide diagram of the 'bag in box' soda syrup supply line routing to the beverage dispenser
- ✓ Pressure relief devices – piped to the outside 36" from all building openings
- ✓ Pressure and level indicators
- ✓ Detection equipment shall be provided at each point of use and in each storage - sensors shall be provided within 12 inches (305 mm) of the floor in the area where the gas is expected to accumulate, or leaks are most likely to occur.
- ✓ Notification devices (horn/strobe) shall be installed in each room/area where a detector is located.

SYSTEM ACTIVATION

- ✓ Activates a low-level alarm upon detection of a carbon dioxide concentration of 5,000 ppm (9000 mg/m3).
  - Stop the flow of carbon dioxide to the piping system.
  - Activate the mechanical exhaust ventilation system.
  - Activate an audible and visible supervisory alarm signal at an *approved* location within the building.
- ✓ Activates a high-level alarm upon detection of a carbon dioxide concentration of 30,000 ppm (54 000 mg/m3).
  - Stop the flow of carbon dioxide to the piping system.
  - Activate the mechanical exhaust ventilation system.
  - Activate an audible and visible evacuation alarm both inside and outside of the carbon dioxide enrichment area, and the area in which the carbon dioxide containers are located.

SIGNAGE

- ✓ Label – 704 Placard
- ✓ Waring sign shall be posted at the entrance to the building, room, enclosure, area where the container is located. The sign shall be not less than 8 inches (200 mm) in width and 6 inches (150 mm) in height and indicate:

✓ CAUTION — CARBON DIOXIDE GAS
Ventilate the area before entering.
A high carbon dioxide (CO_2) gas concentration in this area can cause suffocation.

MATERIAL SUBMITTALS

- ✓ Specification sheet for container(s), piping, hoses, fittings, and CO_2 detectors.

EMERGENCY PLAN REQUIREMENTS

An emergency plan shall be prepared and updated wherever compressed gases or cryogenic fluids are produced, handled, stored, or used in amounts exceeding the maximum allowable quantity (MAQ) per control area or where required by the authority having jurisdiction (AHJ).

- ✓ The type of emergency equipment available and its location
- ✓ A brief description of any testing or maintenance programs for the available emergency equipment
- ✓ An indication that hazard identification labeling is provided for each storage area
- ✓ The location of posted emergency procedures
- ✓ A safety data sheet (SDS) or equivalent for each compressed gas or cryogenic fluid stored or used on the site

- ✓ A list of personnel who are designated and trained to be liaison personnel for the fire department and who are responsible for the following:
    - Aiding the emergency responders in pre-emergency planning
    - Identifying the location of the compressed gases and cryogenic fluids stored or used
    - Accessing SDSs
    - Knowing the site emergency procedures
- ✓ A list of the types and quantities of compressed gases and cryogenic fluids and their locations

*The above list is not intended to be inclusive of all requirements for a new Carbon Dioxide Beverage Dispensing submittal, but rather a guide to indicate the minimum requirements. Refer to 2024 IFC Section 916 & 5307.3 and NFPA 55 Chapter 13 – Cabron Dioxide systems.