



Beverly Hills Fire Department Medical Gas System / Compressed Gases Guideline

Purpose:

The purpose of this document is to provide a guideline that identifies the common information and requirements necessary for the review and approval of Medical Gas Systems or portable compressed gases installed in the City of Beverly Hills.

Scope:

This guideline is applicable to all commercial buildings that install new or make alterations to existing Medical Gas Systems or use, store portable compressed gases. Medical Gas Systems and compressed gases shall comply with NFPA 99, 2019 California Fire Code, 2019 Building Code, Mechanical Code, Plumbing Code and BHMC. All Medical Gas System plans shall be submitted for review and approved prior to any work on the system.

Guidelines:

1. The following Information shall be completed and placed on plans for approval:

- a. List of each compressed gas being used with (Material Data Sheets Included)
- b. Total quantities of each compressed gas used. (Cubic Feet)
- c. Medical Gas Engineering Report (Third Party)
- d. LA County Permit (CUPA) compressed Gases
- e. Floor plan indicating:
 - All rooms, walls and doors including adjacent units within the building
 - Exit plan
 - Location of gas supply
 - Location of each station outlet
 - Location of emergency shut off valves
 - Location of NFPA 704 placard
 - Location of extinguishers
 - Location of MSDS Binder
 - Cylinder quantity / content size (each material) for unit. Updated inventory of medical gases used throughout building. CFC Table 5003.8.3.2
 - Control area study to include wall hour rating between suites and total number of control areas on each floor.
 - Indicate pipe sizes and types per NFPA 99 5.1.10.11.1 / 5.1.10.2.1
 - State the type of procedures to be conducted and risk category according to NFPA 99 4.1

Definition:

1. Medical Gas Systems: An assembly of equipment and piping for the distribution of non-flammable medical gases such as oxygen, nitrous oxide, compressed air, carbon dioxide and helium. Consists of Compressed gases used at health care-related facilities intended for patient care, inhalation or sedation including, but not limited to analgesia systems for dentistry, podiatry, veterinary and similar uses.

General:

1. Stationary and portable compressed gas containers, cylinders, tanks, and systems shall be:
 - a. Marked/labeled with the name of the gas. CFC 5303.4
 - b. Secured against accidental dislodgement and against access by unauthorized personnel. CFC 5303.5
 - c. Physical protection shall be provided to protect compressed gas containers, cylinders, tanks and systems indoor or outdoor from vehicular damage and shall comply to section 312.
 - d. Securing of compressed gas containers, cylinders and tanks from falling caused by contact, vibration or seismic activity shall be met per CFC 5303.5.3
 - e. Compressed gas containers, cylinders, and tank valves shall be protected from physical damage by means of protective caps, collars, plugs or similar devices. CFC5303.6
 - f. Compressed gas containers, cylinders and tanks shall be separated from each other based on the hazard class of their content. CFC 5303.7

2. Piping systems identification: Piping systems shall be marked with the name of the gas and the direction of the flow. Marking shall be provided at each valve; at wall, floor or ceiling penetrations; at each change of direction; and at a minimum of every 20'. CFC 5303.4

3. Piping Systems: Piping, including tubing, valves, fittings and pressure regulators, valves and other apparatus shall be kept gas tight to prevent leakage. CFC 5305.3

4. Emergency Shutoff: Compressed gas systems conveying oxidizing gases shall be provided with approved manual or automatic emergency shut off valves that can be activated at each point of use and at each source. CFC 6303.1.2 Shut off valves shall be easily identifiable.

Specific Requirements for Medical Gas Systems

1. Interior Supply Location: Medical gases shall be stored in areas dedicated to the storage of such gases without other storage or use. Where containers of medical gases in quantities greater than the permit amount are located inside buildings, they shall be in a 1-hour exterior or interior room CFC 5306.2

- One-hour exterior room: A 1-hour exterior room shall be a room or enclosure separated from the remainder of the building by fire barriers constructed in accordance with section

707 of the California Building Code or horizontal assemblies constructed in accordance with Section 711 of the California Building code, or both, with a fire-resistance rating of not less than 1 hour.

Openings between the room or enclosure and interior spaces shall be self-closing smoke- and draft-control assemblies having a fire protection rating of not less than 1 hour. Rooms shall have at least one exterior wall that is provided with at least two vents, each vent shall not be less than 36 square inches in area. One vent shall be within 6 inches of the floor and one shall be within 6 inches of the ceiling. Rooms shall be provided with not less than 1 automatic fire sprinkler to provide container cooling in case of a fire. CFC 5306.2.1

- One-hour interior room: When an exterior wall cannot be provided for the room, automatic sprinklers shall be installed within the room. The room shall be exhausted through a duct to the exterior. Supply and exhausts shall be enclosed in a 1-hour-rated shaft enclosure from the room to the exterior. Approved mechanical ventilation shall comply with the California Mechanical Code and be provided at a minimum rate of 1 cubic foot per minute per square foot of the area of the room. CFC 5306.2.2

Additional Requirements:

1. A separate permit may be required through Los Angeles County Department of Environmental Health for reporting requirements. General contact number is 310-348-1781 (This will need to be verified completed prior to finalization of project)

2. An updated building floor inventory of compressed gases from every tenant / operation will be required.

3. Doors leading into medical gas shall be labeled "Medical Gas Room"

4. A detailed sign posted outside the manifold room (Med Gas Room) door shall be required and shall indicate the following per BHMC:

- NFPA 704 placard with correct numbering on each hazard color indicated on sign
- Name of each type of gas stored indicated on sign
- Approved total quantities of each gas indicated on sign
- "No Smoking" indicated on sign
- "No Additional Storage Permitted Inside" Indicated on sign
- Permit Number posted

Sample of sign:



Portable / Non-fixed Compressed Gases:

1. New or remodeled medical operations that do not have a fixed medical gas system, but will store, use or handle any type of portable compressed medical gases such as Oxygen, Carbon Dioxide, Nitrogen, Nitrous Oxide, Compressed Air or any similar compressed gases will require a floor survey. The purpose of the survey is to verify maximum allowable quantities and assuring the building has not reach their limit of each specific material per CFC 5003.1.1 (1) and 5003.1.1 (2). Any discrepancies found during the initial survey may require the building owner to survey the entire building. A separate permit and inspection can be required for reviewing the survey and verifying compliance.

The survey shall include:

- List of each compressed gases being used / stored with Material Data Sheets Included
- Total quantities of each compressed gas used / stored (Cubic Feet) in each unit and combined total for floor.

Existing operations may be required to reduce or adjust compressed gas quantities if threshold is exceeded.

2. All compressed gas cylinders shall be secured from tipping over.
3. Compressed gases shall not be stored in exit pathways, stairwells or near exits.
4. Compressed gases shall not be stored in mechanical, electrical or similar rooms unless it is an approved designated room per California Building Code.
5. Additional signage may be required to identify material being stored per CFC Chapter 50.