Fire Department
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CODE SUMMARY

PERMITS – COMPRESSED GASES

A code summary is a compilation of code sections related to a specific occupancy or permit. This code summary lists sections of code pertaining to occupancies and operations as defined by the ***California Fire Code***. Under each heading you will find the correlating code language and the reference cited. These requirements pertain to existing buildings. New construction may be subject to additional requirements. Please feel free to direct any questions to the Fire Prevention Division at (805) 681-5500.

SCOPE:

The intent of this guideline is to provide the information necessary to ensure that the use and storage of compressed gases complies with the applicable provisions of the 2013 California Fire Code (CFC). This guideline is applicable to maximum allowable quantities of compressed gas in storage and/or use. Partially full gas cylinders or tanks containing residual gases shall be considered as full for the purpose of the controls required.

1. **A permit is required by the California Fire Code, Section 105.6, to store, transport on site, dispense, use, or handle compressed gas in excess of the following quantities:** Corrosive – 200 cu.ft, Flammable – 200 cu.ft., Highly Toxic – Any amount, Inert and simple asphyxiate – 6,000 cu.ft., Oxidizing (includes oxygen) – 504 cu.ft., Pyrophoric – Any amount, Toxic – Any amount. (California Fire Code 105.6.8)

2. **The Maximum Allowable Quantity (MAQ) of flammable gas in storage or used in a closed system, shall be equivalent to the MAQ of a flammable gas, provided that the provisions of Chapters 35 and 53 have been met.**
   A. For storage and use in a non-sprinklered building, the MAQ shall not exceed 1000 c.f.
   B. For storage and use in a sprinklered building, the MAQ shall not exceed 2000 c.f.
   C. When stored or used in a separate Control Area, or approved gas cabinets, when the building is equipped with an approved fire sprinkler system, the MAQ shall not exceed 4000 c.f. (CFC 5803.1)

3. **Compressed gas containers shall be designed, fabricated, tested, and marked in accordance with the regulations of DOTn 49 CFR.** (CFC 5303.2)

4. **Pressure relief devices shall be provided to protect containers, cylinders and tanks containing compressed gases from rupture in the event of overpressure.**

5. **Stationary and portable compressed gas containers, cylinders, tanks and systems shall be marked as follows:**
   A. Stationary compressed gas containers shall be marked with the name of the gas and shall be visible from any direction of approach. (CFC 5303.4.1)
   B. Portable compressed gas containers shall be marked in accordance with CGA C-7. (CFC 5303.4.2)

C. Piping systems shall be marked in accordance with ASME A13.1. (CFC 5303.4.3)
   I. Markings shall consist of the content's name and include a direction-of-flow arrow.
   II. 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 feet throughout the piping.

6. **Compressed gas containers shall be protected against access by unauthorized personnel.** (CFC 5303.5.1)

7. **Compressed gas containers that could be exposed to physical damage shall be protected.**
   Guard posts or other approved means shall be provided to protect containers from vehicular damage. (CFC 5303.5.2)

8. **Compress gas containers shall be secured to prevent falling caused by contact, vibration or seismic activity**. (CFC 5303.5.3)

9. **Compress gas containers valves shall be protected from physical damage by means of protective caps, collars or similar devices.**
   Compress gas containers designed for protective caps shall have caps in place. (CFC 5303.6.2)

10. **Compress gas containers shall be separated from material and conditions which pose exposure hazards to or from each other with regard to the following:**
    A. Incompatible materials (CFC 5303.7.1)
    B. Combustible waste and vegetation (CFC 5303.7.2)
    C. Ledges, platforms or elevators (CFC 5303.7.3)
    D. Temperature extremes (CFC 5303.7.4)
    E. Falling objects (CFC 5303.7.5)
    F. Heating (CFC 5303.7.6)
    G. Sources of ignition (CFC 5303.7.7)
    H. Exposure to chemicals (CFC 5303.7.8)

11. **Leaking, damaged or corroded compressed containers shall be removed from service.** (CFC 5303.12)

12. **Compress gas containers shall be stored in an upright position.** (CFC 5304.1)
    Exceptions:
    1.) Containers with a water volume less than 1.3 gallons.
    2.) Containers secured for transportation.

13. **For compressed gas systems and medical gas systems, see CFC Chapter 53.**

NOTE: The storage or use of a single cylinder of oxygen and a single cylinder of fuel gas located on a cart or truck shall be allowed without requiring the cylinders to be separated in accordance with CFC Section 2703.9.8 or 2703.10.3.6 when the cylinders are connected to regulators, ready for service, equipped with apparatus designed for cutting or welding and all of the following:

A. Carts or trucks shall be kept away from the cutting or welding operation or fire-resistant shields shall be provided.
B. Cylinders shall be secured to the cart or truck to resist movement.
C. Carts and trucks shall be in accordance with Section 5003.10.3.
D. Cylinder valves not having fixed hand wheels shall have keys, handles or nonadjustable wrenches on valve stems while cylinders are in service.
E. Cylinder valve outlet connections shall conform to the requirements of CGA V-1.
F. Cylinder valves shall be closed when work is finished.
G. Cylinder valves shall be closed before moving the cart or truck.
H. Individual carts and trucks shall be separated from each other. See CFC 5003.9.8