Corona Fire Department

Acetylene Gas Guideline
Per 2016 California Fire Code

PURPOSE

The intent of this guideline is to provide the information necessary to ensure that the use and storage of acetylene gas complies with the applicable provisions of the 2016 California Fire Code (CFC), as modified by the Authority Having Jurisdiction.

SCOPE

This guideline is applicable to maximum allowable quantities of acetylene gas in storage and/or use. Partially full acetylene cylinders or tanks containing residual gases shall be considered as full for the purpose of the controls required.

PERMITS

1. Permits are required by the California Fire Code, Section 105.6, to store, transport on site, dispense, use, or handle acetylene gas in excess 200 c.f., as specified in CFC Table 105.6.9.

REQUIREMENTS

1. The Maximum Allowable Quantity of acetylene gas in storage or used in a closed system, shall be equivalent to the MAQ of a flammable gas, provided that the provisions of Chapter 58 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, and when the building is equipped with an approved fire sprinkler system, the MAQ shall not exceed 4000 c.f.

2. Devices or attachments mixing air or oxygen with combustible gases prior to consumption, except at the burner or in a standard torch or blow pipe, shall not be allowed unless approved, per CFC 3505.1.

3. The storage or use of a single cylinder of oxygen and a single cylinder of fuel gas located on a cart shall be allowed without requiring the cylinders to be separated in accordance with CFC Section 5003.9.8 or 3505.2.1 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 shall be kept away from the cutting or welding operation or fire-resistant shields shall be provided, per CFC 3505.5.
    b. Cylinders shall be secured to the cart to resist movement.
    c. Carts shall be designed in accordance with Section 5003.10.3.1 through 5003.10.3.6

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.
h. Individual carts shall be separated from each other in accordance with CFC 5003.9.8.
i. Incompatible materials in storage shall be separated by 20' or by a noncombustible partition not less than 18" above and to the sides of stored cylinders.

4. Cylinders, valves, regulators, hose and other apparatus and fittings for oxygen shall be kept free from oil or grease. Oxygen cylinders, apparatus and fittings shall not be handled by oily hands, oily gloves, or greasy tools or equipment, per CFC 3505.3.

5. Acetylene gas shall not be piped except in approved cylinder manifolds and cylinder manifold connections, or utilized at a pressure exceeding 15 psig unless dissolved in a suitable solvent in cylinders manufactured in accordance with DOTn 49 CFR Part 178. Acetylene gas shall not be brought in contact with unalloyed copper, except in a blowpipe or torch.

6. Oxygen and fuel-gas cylinders and acetylene generators shall be located away from the hot work area to prevent such cylinders or generators from being heated by radiation from heated materials, sparks or slag, or misdirection of the torch flame, per CFC 3505.5.

7. The torch valve shall be closed and the gas supply to the torch completely shut off when gas welding or cutting operations are discontinued for a period of 1 hour or more, per CFC 3505.6.

8. Welding or cutting work shall not be held or supported on compressed gas cylinders or containers, per CFC 3505.7.

9. Tests for leaks in piping systems and equipment shall be made with soapy water. The use of flames shall be prohibited for leak testing, per CFC 3505.8

10. Welding, cutting, and other hot work operations shall comply with the provisions of CFC Chapter 35. For additional details, see the Welding & Other Hot Work Guidelines per 2016 California Fire Code, at www.discovercorona.org

11. A current compressed gas permit sand welding & cutting permit shall be available on site for inspection. CFC permits are required to be renewed every two years.