



Corona Fire Department

Welding & Other Hot Work Guidelines per 2016 California Fire Code

PURPOSE

The purpose of this guideline is to provide conditions and requirements to companies and individuals who are required to obtain a permit for the use of welding, cutting, open torches and other hot work operations and equipment within the City of Corona.

SCOPE

Permits are required as set forth in the 2016 California Fire Code, Chapter 1, Section 105.6. A permit is required for cutting and welding, and for hot work operations, including: public exhibitions and demonstrations, use of portable hot work within a structure, fixed-site hot work equipment such as welding booths, hot work conducted within a hazardous fire area, and application of roof coverings with the use of an open-flame device. Requirements are from the 2016 edition of the California Fire Code, Chapter 35 Welding and Hot Works.

DEFINITIONS

1. HOT WORK is operations including cutting, welding, Thermit welding, brazing, soldering, grinding, thermal spraying, thawing pipe, installation of torch-applied roof systems or any similar activity.
2. HOT WORK AREA is the area that is exposed to sparks, hot slag, or radiant or convective heat as a result of the hot work.
3. HOT WORK EQUIPMENT is electric or gas welding or cutting equipment used for hot work.
4. HOT WORK PROGRAM is a permitted program, carried out by approved facilities-designated personnel, allowing them to oversee and issue permits for hot-work operations conducted by their personnel or at their facility. The intent is to have trained; on-site, responsible personnel ensure that required hot work safety measures are taken to prevent fires and fire spread.

GENERAL REQUIREMENTS

Applicant shall complete a permit application and provide a minimum of the following information before the permit may be processed; permit applications are available at the Fire Department Public Counter and online at www.discovercorona.com

1. A plot plan drawing, to scale, showing a minimum of the following details:
 - Building(s) or portions of buildings where hot work operations are conducted.
 - Location of welding equipment
 - Storage of gas cylinders
 - Total capacity and type of gases being stored in cubic feet
 - Location, classification and size of fire extinguishers
2. Hot work areas shall not contain combustibles or shall be provided with appropriate shielding to prevent sparks, slag or heat from igniting exposed combustibles, per CFC 3504.1.1.
3. Openings or cracks in walls, floors, ducts or shafts within the hot-work area shall be tightly covered or shielded to prevent passage of sparks or slag, per CFC 3504.1.2.

4. Floors shall be kept clean within the hot-work area, per CFC 3504.1.3.
5. Conveyor systems capable of carrying sparks to distant combustibles shall be shielded or shut down, per CFC 3504.1.4.
6. Partitions segregating hot work areas from other areas of the building shall be noncombustible and securely connected to the floor without gaps to prevent passage of sparks, slag and heat from the hot work area per CFC 3504.1.5.
7. Fixed hot work areas shall have floors with noncombustible floors per CFC 3504.1.6.
8. Hot work shall not be performed on containers or equipment containing or having contained flammable liquids, gases or solids until they have been cleaned and inerted or purged. "Hot tapping" may be allowed when conducted by approved personnel, per CFC 3504.1.7.
9. Automatic sprinkler protection shall not be shut off while hot work is performed per CFC 3504.1.8. Hot work performed close to fire sprinklers shall be shielded by noncombustible barriers or damp cloth guards, provided they are removed when the work is completed and at the end of each work day. The Fire Prevention Bureau shall approve hot work where sprinkler protection is impaired.
10. Fire watches shall be established and conducted for a minimum of 30 minutes after the conclusion of the work, and shall adhere to the following:
 - Fire watch shall include the entire hot work area. Vertical or horizontal fire exposures may require additional personnel assigned to fire watches to ensure that exposed areas are monitored.
 - Individuals assigned to fire watch shall have fire-extinguishing equipment readily available and shall be trained in the use of such equipment. They shall be responsible for extinguishing spot fires and communicating an alarm.
 - Individuals performing the hot work operations shall be trained in the use of portable fire extinguishers.
 - Where hoselines are required, they shall be connected, charged and ready for operation.
 - An extinguisher with a minimum rating of 2-A:20-B:C shall be readily accessible within 30 feet of the location where hot work is performed.

PRE-HOT-WORK INSPECTION:

1. A pre-hot-work check shall be conducted in accordance with CFC 3504.3.1, and as follows:
 - Hot-work equipment to be used shall be in satisfactory operating condition and in good repair.
 - The site is clear of combustibles or combustibles are adequately protected.
 - Exposed construction is of noncombustible materials or, if combustible, then protected.
 - Openings are protected.
 - Floors are kept clean.
 - No exposed combustibles are located on the opposite side of any partitions, walls, ceilings or floors.
 - Fire watches, where required, are assigned.
 - Fire extinguishers and fire hoses (where provided) are operable and available
 - Approved actions have been taken to prevent accidental activation of suppression and detection equipment.
2. A report of the pre-hot-work check shall be kept at the work site during the work and available upon request.

CYLINDERS:

1. All materials in cylinders shall be confirmed to meet the maximum allowable quantities for compressed gases contained in CFC Chapter 50.
2. Oxygen Manifolds: Oxygen manifolds shall not be located in an acetylene generator room. Oxygen manifolds shall be located at least 20 feet from combustible material such as oil or grease, and gas cylinders containing flammable gases, unless any substance likely to cause or accelerate fire, per CFC 3509.4.
3. Fuel-gas manifolds: Where it is necessary to manifold fuel-gas cylinders having an aggregate capacity in excess of the exempt amounts, cylinders and manifolds shall be located in a room or building complying with the Building Code..
4. Ventilation shall be provided as required by CFC 5004.3 or 5005.1.9. Venting of gases shall be directed to an approved location per CFC 5305.5. Ventilation shall comply with the California Mechanical Code.
5. Maximum operating pressure for acetylene shall not be greater than 15 psi gauge, per CFC 3505.4.
6. 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 with oily hands, oily gloves or greasy tools or equipment, as required by CFC 3505.3.
7. Hoses shall be inspected frequently for leaks, burns, wear, loose connections or other defects per CFC 3509.7. Damaged, leaking or worn hoses shall not be used.

ARC-WELDING EQUIPMENT:

1. Emergency Disconnect: A switch or circuit breaker shall be provided so that fixed electric welders and control equipment can be disconnected from the supply circuit. The disconnect shall be installed in accordance with the California Electrical Code, per CFC 3506.4.
2. Damaged cables shall be removed from service until repaired or replaced, per CFC 3506.5.
3. A minimum 2-A:20-B:C rated fire extinguisher or a charged water hose equipped with a nozzle shall be located within 30 feet of the location where hot work is conducted per CFC 3504.2.6
4. Visible hazard identification signs shall be provided where required by CFC Chapter 50. Conspicuous signs shall be posted to warn others before they enter the hot-work area. Such signs shall show the following warning and shall be posted in all languages spoken in the area of the work:

CAUTION – HOT WORK IN PROCESS – STAY CLEAR

FIXED HOT-WORK AREAS:

1. Fixed hot-work areas shall meet the above requirements and:
 - a. Floors in fixed hot-work areas shall have non-combustible surfaces, per CFC 3504.1.6.
 - b. Partitions segregating hot-work areas from other areas in the building shall be noncombustible and shall be securely connected to the floor so that there is no gap between the floor and partition. Partitions shall prevent the passage of sparks, slag and heat from the hot-work area, per CFC 3504.1.5.