



# CITY OF NEWPORT BEACH

## Fire Department

### Fire Prevention Division

# GUIDELINES AND STANDARDS

## GUIDELINE A.18 – Welding and Hot Work Operation

### A.18.1 PURPOSE

The purpose of this guideline is to establish conditions and requirements for companies and individuals seeking a permit for the utilization of welding, cutting, open torches, and other hot work operations and equipment within the City of Newport Beach.

### A.18.2 SCOPE

Permits are required as outlined in Chapter 1 of the current edition of the California Fire Code. A permit is necessary for cutting, welding, and hot work operations, encompassing public exhibitions and demonstrations, the use of portable hot work within a structure, fixed-site hot work equipment like welding booths, hot work conducted within a hazardous fire area, and the application of roof coverings using an open-flame device. Additional permits may be necessary for the storage and use of compressed gases. These requirements are sourced from the current edition of the California Fire Code, Chapter 35 Welding and Hot Works and Chapter 53 Compressed Gases.

### A.18.3 DEFINITIONS

**Hot Works:** Operations including cutting, welding, Thermit welding, brazing, soldering, grinding, thermal spraying, thawing pipe, installation of torch-applied roof systems or any similar activity.

**Hot Work Area:** The area that is exposed to sparks, hot slag, radiant heat, or convective heat as a result of the hot work.

**Hot Work Equipment:** Electric or gas welding or cutting equipment used for hot work.

#### A. Procedure:

Welding operations within the city of Newport Beach require either a temporary or annual operational permit. Temporary permits are issued for specific projects, such as those associated with construction sites, and are linked to a corresponding construction permit. Once the construction permit is signed off, the temporary welding permit becomes void. Temporary permits may require periodic updates. On the other hand, annual operational welding permits are intended for businesses that regularly use and store welding equipment as part of their ongoing operations. These permits are nontransferable.

1. Annual operational permits shall be through the Fire Prevention Division. Submittals shall be processed via online to [FDprevention@nbfd.net](mailto:FDprevention@nbfd.net). For further information please contact us on the general number at 949.644.3106.

2. Temporary welding permits shall be through the Fire Prevention Division. Submittals shall be processed via online only at [https://css.newportbeachca.gov/EnerGov\\_Prod/SelfService#/home](https://css.newportbeachca.gov/EnerGov_Prod/SelfService#/home) For further inquiries or assistance, please contact us on the general number at 949.644.3106.

3. A site plan drawing, to scale, shall be uploaded with the application and shall include the following details for all temporary and annual permits:

- Building(s) or portions of buildings where hot work operations are conducted.
- Location of welding equipment being stored. (Can be different from work area)
- Location of gas cylinders, and total capacity of each gas and type of gases being stored in cubic feet. (storage of cylinder(s) may be required to be separated due to incompatibility vs use)
- Provide a minimum of a 2-A:20-B:C certified fire extinguisher within 30 feet of operation.

#### B. Hot work Areas:

1. 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.
2. 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.
3. Floors shall be kept clean within the hot-work area, per CFC 3504.1.3.
4. Conveyor systems capable of carrying sparks to distant combustibles shall be shielded or shut down, per CFC 3504.1.4.
5. 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.
6. Storage of welding equipment, cylinders shall not be placed underneath stairs or in electrical, mechanical, boiler or similar rooms.
7. Welding operations shall not be conducted near exits or hazardous materials / environments.
8. No combustible vegetation shall be within 30 feet of temporary hot work operation when located outside. Fire Department may accept listed shielding if proper clearances cannot be provided.
9. No hot work operation shall take place in the Very High Fire Hazard Severity Zone during an appointed Red Flag Day.

*\* The authorization for hot work operations may be revoked, and the operation ceased at the discretion of the fire department if it is determined to pose a fire hazard, in accordance with the definition outlined in CCR Title 19 Division 3:14. Fire Hazard is any condition, arrangement, or act which will increase, or may cause an increase of, the hazard or menace of fire to a greater degree than customarily recognized as normal by persons in the public service of preventing, suppressing or extinguishing fire; or which may obstruct, delay or hinder, or may become the cause of obstruction, delay or hindrance to the prevention, suppression or extinguishment of fire.*

### C. Fire Safety Requirements:

1. 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 inverted or purged. "Hot tapping" may be allowed when conducted by approved personnel, per CFC 3504.1.7. Hot work on flammable and combustible liquid storage tanks shall be conducted in accordance with Section 3510.
2. 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 workday.
3. 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 hose lines 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.

### D. Pre- Hot Work Inspection:

1. Prior to conducting welding operations, it is mandatory to complete a pre-hot-work check form. (see attached document) All records must be kept on-site. The following criteria shall be verified:
  - 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. Explosive atmosphere in area is eliminated.
  - Exposed construction is of noncombustible materials or, if combustible, then protected.
  - All wall and floor openings are protected.
  - Floors are kept clean. (Free of flammable liquid, dust, lint, and oily residue)
  - No exposed combustibles are located on the opposite side of any partitions, walls, ceilings, or floors.
  - Fire watches, where required, are assigned.
  - Approved actions have been taken to prevent accidental activation of suppression and detection equipment.
  - Minimum 2A;20:BC certified extinguisher mounted, accessible, and visible within 30 feet of welding operation is available.

\*After completing hot work operations, thoroughly inspect the area for any signs of ignition or combustion.

2. A report of the pre-hot-work check shall be kept at the work site during the work and available upon request.

#### E. Cylinders:

3. Storage, handling and use of compressed gas cylinders, containers and tanks shall be in accordance with this section and Chapter 53. All compressed gas cylinders shall be properly secured from falling over, protected from physical damage and caps and plugs present on non-use cylinders.
4. 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.
5. 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.
6. 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.
7. Maximum operating pressure for acetylene shall not be greater than 15 psi gauge, per CFC 3505.4.
8. 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.
9. 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.
10. Signage and placarding of cylinders shall be in accordance with Chapter 50 of the California Fire Code.

#### F. 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**

G. 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.

**WELDING & HOT WORK CHECK LOG**



# NBFD Hot Work Form

This form is required to be completed prior to initiating any hot work operation. All items listed below must be checked and verified to ensure safety measures are in place before proceeding with the operation. Completed forms should be filed for record keeping purposes and kept on-site, adjacent to the designated hot-work area. Failure to complete form can result in the revocation of the Hot Work Permit.

Date: \_\_\_\_\_

Location \_\_\_\_\_ Floor: \_\_\_\_\_

Time started: \_\_\_\_\_ Time completed: \_\_\_\_\_

Hot work conducted by:  Employee  Contractor

Print name of person conducting hot work operation:  
\_\_\_\_\_

## Indoor

- Verify all on-site fire protection systems fully operational i.e., sprinklers, fire alarm, extinguishers, and any other similar fire protection systems.
- Approved actions have been taken to prevent accidental activation of suppression and detection equipment.
- Exposed construction is of noncombustible or if combustible, then protected.
- Flammable liquid, dust, lint, and oily deposits removed from welding area.
- Explosive atmosphere in area eliminated. (No flammable vapors and or dust particles in the air)
- Hot work equipment is in good working condition in accordance with manufacturer's specifications.
- Other combustible storage material removed or covered with listed or approved materials (welding pads, blankets, or curtains; fire-resistive tarpaulins), metal shields, or noncombustible materials.
- All wall and floor openings covered.
- Ducts and conveyors that might carry sparks to distant combustible material covered, protected, or shut down.
- Combustible material on other side of walls, ceilings, or roofs is moved away.
- Enclosed equipment is cleaned of all combustibles.
- Hot work operation not located near exits, exit paths or stairwells.
- Minimum 2A;20:BC certified extinguisher mounted, accessible, and visible within 30 feet of welding operation is available.
- Area inspected thoroughly 30 minutes after hot works operation for any signs of ignition or combustion.
- Yes  No Was a fire watch assigned while hot-work operation took place?
- No combustible vegetation within 30 feet of temporary hot work operation or approved shielding provided.
- Hot work operation taking place in the Very High Fire Hazard Severity Zone has been verified to not be a Red Flag Day (National Weather Service <https://alerts.weather.gov/cap/wwaatmget.php?x=CAC059&y=1> )

Signature: \_\_\_\_\_