

NAVY PUBLIC WORKS CENTER
DETACHMENT PHILADELPHIA

STANDARD OPERATING PROCEDURE

Welding and Cutting Operations

PROCEDURE NUMBER 500. 10

DISCLAIMER: These Standard Operating Procedures (SOP) are for the exclusive use of NAVY PUBLIC WORKS CENTER (PWC) NORFOLK DETACHMENT PHILADELPHIA. They are promulgated as guidance for other NAVFAC COMMANDS. If intended to be used by other Activities, they must be tailored to each Activities particular requirement and must be reviewed/approved by the activities Safety Professionals prior to use.

Preparer: _____ (Date)

Approved: _____ (Date)

Safety Professional: _____ (Date)

Department Head: _____ (Date)

Officer in Charge _____ (Date)

Welding And Cutting Operations

Welding and Cutting Operations

1. Welding and cutting operations shall be conducted in locations that have been designated for that purpose. Other locations may be used if they are free of fire hazards, I. E., explosive or combustible materials, liquids or vapors, and if suitable precautions have been taken against the reaccumulation of such material. Hot work permits and a fire watch are required for all welding and burning **NOT** conducted in an authorized area.
2. Operators of welding or cutting equipment must be properly instructed and qualified to operate such equipment. Instruction shall include all precautions specific to the operation.
3. Welding or burning operations shall be under the supervision and control of a supervisor who shall see that all regulations pertaining to welding and burning operations are complied with.
4. Welding and cutting operations aboard barges and tugs while at a wooden pier or wharf. No hot work is permitted on or adjacent to a wooden pier or wharf.
5. When flammable or explosive materials are exposed to welding or cutting operations, a fire watch shall be posted in the vicinity with necessary extinguishers or fire hose. The fire watch shall remain at his station for at least 30 minutes after the job is completed to ensure that there are no live sparks or smoldering fires.
6. Welding or cutting operations shall be performed in or on the outer surfaces of rooms, compartments, or tanks; areas adjacent to rooms, compartments, or tanks, on or in closed drums, tanks or other containers which hold or have held flammable or explosive materials, liquids, or vapors, until fire and explosion hazards have been eliminated.
7. All cylinders shall be handled carefully. Acetylene and oxygen cylinders on portable welding rigs shall be chained in place.
8. Oxygen cylinders shall be kept free of grease and oil at all times. A high pressure leak from an oxygen cylinder may cause a sufficient amount of rapid oxidation to ignite nearby gasoline, oil, grease, or alcohol, and result in fire or explosion.
9. Acetylene cylinders shall not be used while in a horizontal position.
10. When equipment is in use, it shall be frequently inspected for evidence of leaks in the hose,

couplings, valve stems, or other points of the systems in confined spaces. If leaks are not promptly detected, an explosive or lethal mixture of gas and air may accumulate with serious results.

11. Where welding cables or hoses are in the path of traffic, they shall be protected from chafing damage by a protective covering properly secured, or if elevated above traffic, supported by lines to prevent undue strain on cable or hoses.

12. The main cylinder valves on the oxygen and acetylene bottles shall be secured and pressure bled off the pressure regulator at the end of each work shift.

13. Acetylene and oxygen cylinders, except where installed in standard welding rigs, shall be stored at detached, well-ventilated locations, shielded from the sun. The storage of acetylene shall be isolated from oxygen cylinders by a clear distance of at least 20 feet or by an unpierced gas tight fire wall for indoor storage. Smoking shall be prohibited within 50 feet of such areas. In the event that acetylene cylinders have been transported or stored in an horizontal position, they must be stored in a vertical position for a period of not less than 48 hours before use.

14. When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight all electrodes shall be removed from the holders and the holders carefully located so that accidental contact cannot occur and the machine disconnected from the power source.

15. When gas welding or cutting is to be suspended for any substantial period of time, the torch valves shall be closed and fuel gas and oxygen shutoff outside the space or the torch and hose shall be removed from the space.

16. Hot metal shall be marked as such when operations are completed or suspended for any substantial period of time.

17. Under no conditions will hot work be performed on pressurized vessels, containers or tanks.

18. No hot work shall be performed on used drums, barrels, tanks or other containers until they have been thoroughly cleaned, purged and or certified gas free. All lines or connections shall be disconnected or blanked.

Welding Aloft

If it is necessary for a welding operator to work on platforms, scaffolds, or runways at an elevation of more than five feet, provisions shall be made to prevent falling.

