

HOT WORK

A. DISCLAIMER

This standard of care in no way supersedes or is meant to take the place of applicable local requirements from the local fire prevention authority. Where requirements from the local authority are in excess of this standard, they must be met. For example, a marine hot work permit is required by the City of Seattle; for more information see <http://www.seattle.gov/fire/FMO/permits/permits.htm>.

B. HOT WORK DEFINED

- ◆ Flame heating, welding, torch cutting, brazing or carbon arc gouging.
- ◆ Any operation which produces temperatures of 204°C or higher.
- ◆ Note: Operations not producing hot sparks or flame such as spark-producing or arc-producing tools or equipment, static discharge, friction, open flame or embers, impact, and nonexplosion-proof equipment such as lights, fixtures, or motors are not considered hot work unless in the presence of flammable liquids or in a flammable atmosphere.

C. MASTER'S RESPONSIBILITIES

Any hot work operation has the potential to ignite combustible or flammable materials. It is the Master's responsibility to take precautions to prevent fires caused by the exposure of combustibles to the effects of hot work.

D. CONFINED SPACES -- MARINE CHEMISTS

Contact marine chemists to certify confined spaces as safe for hot work. Marine chemists are also extremely valuable to use in evaluating spaces and attendant conditions for hazards.

E. PRECAUTIONS

1. CLEANING AND VENTILATING FOR HOT WORK

- ◆ Before hot work is started, the space should be inspected, emptied of flammable cargo, cleaned, ventilated and tested to ensure the atmosphere is at 10% or less of the **Lower Explosive Level** and that toxic concentrations are limited to the **Permissible Exposure Level**.
- ◆ Extraneous flammable or combustible materials such as scrap wood, paper, ropes or rags should be removed from the space or moved a minimum of 11 meters away from the work site. Combustible materials that cannot be removed should be adequately protected.

- ◆ Fans, blowers, motors and other such equipment utilized to ventilate atmospheres containing flammable or explosive vapors, fumes, mist or dust shall be approved, explosion-proof equipment or intrinsically safe equipment.

2. **FLAMMABLE LIQUIDS/ ATMOSPHERES**

- ◆ Do not perform hot work when flammable liquids or flammable atmospheres are present.
- ◆ When hot work is to be performed on fuel tanks, associated vent spaces or other spaces containing flammables (e.g., paint lockers, flammable liquid storerooms), the adjacent spaces above, below and on all sides (boundary spaces) should first be inspected and tested, cleaned and ventilated or inerted as appropriate.
- ◆ Hollow connections to a space can present the same hazards as the space itself. Pipes, tubes, coils or similar items that service, enter or exit a confined space should be flushed, blown, purged or otherwise cleaned before the performance of hot work on such items. If not so treated, the space should not be considered safe for hot work.
- ◆ Valves to pipes, tubes or similar items should be closed, or the pipes blanked off, to prevent inadvertent discharge or backflow of material into the space.

3. **FIRE WATCH**

- ◆ Hot work should only be conducted in those spaces where it is certain that no combustible materials or flammable residue exist. Even then, when flame heating, welding, torch cutting, brazing or carbon arc gouging or any operations that produce temperatures of 204°C or higher are conducted, establish a trained fire watch at the worksite with an unobstructed view of the hot work operation.
- ◆ When hot work may transmit a fire hazard into adjacent spaces by overheating the connecting deck, overhead or bulkhead, provide fire watches on both sides of the deck, overhead or bulkhead.
- ◆ When more than one fire watch is appropriate, a means of communication is required; this will enable the fire watch to report hazardous conditions on the opposite side of separating structures and provided a signal to stop the work.
- ◆ Fire watches on both sides of the separating structures should have and know how to use fire-extinguishing equipment suitable to the exposure.

- ◆ After completion of the hot work operation, fire watches should remain on station until all hot work is cool to the touch or 30 minutes (whichever is greater), ensuring that no smoldering embers remain.

4. HANDLING DANGEROUS CARGO AT WATERFRONT FACILITIES

- ◆ When handling dangerous cargo (all hazardous materials listed in 49 CFR parts 170 through 179, except those materials preceded by an “A” in the Hazardous Materials Table in 49 CFR 172.101 and all cargo listed in 46 CFR part 148) at designated waterfront facilities, the provisions of [33 CFR 126.15](#) and [33 CFR 126.30](#) must be adhered to. This includes safety requirements, fire extinguishing equipment, and welding and hotwork conditions.
- ◆ Contact Coast Guard Sector Seattle at 206-217-6165 for more information.