



Job Name: _____ Job Site Location: _____

Date: _____ Start Time: _____ Finish Time: _____ Foreman/Supervisor: _____

Topic 580: Welding Safety (General)

Introduction: During construction operations, employers must provide reasonable safety to employees involved in welding operations and to persons exposed to welding operations, welding equipment, and the compressed gases used. Following are safety guidelines for general welding operations:

- **Employers must ensure** that each employee has received safety training in the use of equipment for welding operations before allowing the employee to use the equipment.
- **Employers must provide** protection to an employee against toxic, or hazardous materials, or deficient oxygen.
- **Assure** that an employee in charge of the operation of oxygen or fuel gas supply equipment, or of oxygen, or fuel gas systems is instructed and judged competent for this work by the employer before being left in charge.
- **Rules and instructions** covering the operation and maintenance of oxygen, or fuel gas distribution piping systems must be readily available.



An employee is required to do all of the following: (1) Use welding and cutting equipment as trained and authorized. (2) Use the protective equipment required by the hazard. (3) Not tamper with safety devices. (4) Report to the supervisor any faulty or defective equipment.

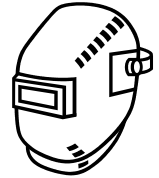
Welding operations must not be permitted in the following situations: (1) In an area not authorized by the building or structure occupant. (2) In a sprinklered building while the sprinkler system is impaired, unless a fire watch is provided. (3) In the presence of a potentially explosive atmosphere, such as mixtures of flammable gases, vapors, liquids, or dusts with air.

Operations: Before the start of a welding operation in a confined space, the atmosphere is required to be tested and ventilation must be provided.

- **When working in a confined space**, the torch valves and the gas supply valve and oxygen valve outside the confined space must be shut off during the lunch period, overnight, or during any other prolonged period and the torch and hose shall be removed from the confined space.
- **Torches must be** inspected before each shift for leaking shutoff valves, hose and tip connections, or clogged tips.
- **Cylinders must be** legibly marked with either the chemical or trade name. Marking must be by stenciling, stamping, or labeling.
- **Hoses and connections must be** inspected before each shift for burns, leaks, worn places, or other defects which may affect all welders' safety.
- **Welding operations must not be** performed within 50 feet of explosives, stored cylinders, or stored fuel. Combustible and flammable materials located within 35 feet of a welding operation must either be removed, or covered with fire-resistant material. Cracks or openings through which sparks could pass in the floor or wall that are within 35 feet of a welding operation are required to be covered with a fire-resistant material.
- **Suitable fire extinguishing equipment** must be maintained in a state of readiness for instant use. Such equipment may consist of pails of water, buckets of sand, hose or portable extinguishers depending upon the nature and quantity of the combustible material exposed.
- **A welder or helper** working on platforms, scaffolds, or runways shall be protected against falling. This may be accomplished by the use of railings, safety belts, life lines, or other equally effective safeguards.
- **Welders are required to** place welding cable and other equipment so that it is clear of passageways, ladders, and stairways.



Personal Protective Equipment: Helmets or hand shields shall be used during all arc welding or arc cutting operations, excluding submerged arc welding. Helpers or attendants shall be provided with proper eye protection. Goggles or other suitable eye protection are required to be used during all gas welding or oxygen cutting operations. Spectacles without side shields, with suitable filter lenses are permitted for use during gas welding operations on light work. All operators and attendants of resistance welding, or resistance brazing equipment shall use transparent face shields, or goggles, depending on the particular job, to protect their faces or eyes.



- **Helmets and hand shields must be** made of a material which is an insulator for heat and electricity. Helmets, shields, and goggles must be not readily flammable and must be capable of withstanding sterilization. Helmets and hand shields are required to be arranged to protect the face, neck and ears from direct radiant energy from the arc. Helmets must be provided with filter plates and cover plates designed for easy removal.
- **In areas immediately hazardous to life**, a full-facepiece, pressure-demand, self-contained breathing apparatus, or a combination full-facepiece, pressure-demand supplied-air respirator with an auxiliary, self-contained air supply must be used.
- **Employees exposed** to the hazards created by welding, cutting, or brazing operations are required to be protected by personal protective clothing required for any welding operation with the size, nature, and location of the work to be performed taken into consideration.

Conclusion: There are numerous health hazards associated with exposure to fumes, gases, and ionizing radiation formed or released during welding including heavy metal poisoning, lung cancer, metal fume fever, and flash burns. These risks vary depending upon the type of welding materials and welding surfaces. Whenever welding operations are in progress, everyone involved in the operations must take precautions to prevent fires, explosions, or personal injuries from welding hazards. Always remember to utilize these safety guidelines for safe welding operations.

Work Site Review

Work-Site Hazards and Safety Suggestions: _____

Personnel Safety Violations: _____

Employee Signatures:

(My signature attests and verifies my understanding of and agreement to comply with, all company safety policies and regulations, and that I have not suffered, experienced, or sustained any recent job-related injury or illness.)

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