

# Welding & Cutting

## **WELDING & CUTTING SAFETY PROCEDURES**

### **INTRODUCTION & SCOPE**

Before any welding operations begin they should be reported to onsite superintendent. The contractor shall perform welding and cutting in accordance with OSHA regulation 29 CFR 1926.352. These shall include, but not be limited to:

- When practical, objects to be welded, cut, or heated shall be moved to a designated safe location or, if the objects to be welded, cut, or heated cannot be readily moved, all movable fire hazards in the vicinity shall be taken to a safe place, or otherwise protected.
- If the object to be welded, cut, or heated cannot be moved and if all the fire hazards cannot be removed, positive means shall be taken to confine the heat, sparks, and slag, and to protect the immovable fire hazards from them.
- No welding, cutting, or heating shall be done where the application of flammable paints, or the presence of other flammable compounds, or heavy dust concentrations creates a hazard.
- Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use.
- When the welding, cutting, or heating operation is such that normal fire prevention precautions are not sufficient, additional personnel shall be assigned to guard against fire while the actual welding, cutting, or heating operation is being performed, and for a sufficient period of time after completion of the work to ensure that no possibility of fire exists. Such personnel shall be instructed as to the specific anticipated fire hazards and how the firefighting equipment provided is to be used.
- When welding, cutting, or heating is performed on walls, floors, and ceilings, since direct penetration of sparks or heat transfer may introduce a fire hazard to an adjacent area, the same precautions shall be taken on the opposite side as are taken on the side on which the welding is being performed.
- For the elimination of possible fire in enclosed spaces as a result of gas escaping through leaking or improperly closed torch valves, the gas supply to the torch shall be positively shut off at some point outside the enclosed space whenever the torch is not to be used or whenever the torch is left unattended for a substantial period of time, such as during the lunch period. Overnight and at the change of shifts, the torch and hose shall be removed from the confined space. Open end fuel gas and oxygen hoses shall be immediately removed from enclosed spaces when they are disconnected from the torch or other gas-consuming device.
- Except when the contents are being removed or transferred, drums, pails, and other containers which contain or have contained flammable liquids shall be kept closed. Empty containers shall be removed to a safe area apart from hot work operations or open flames.

- Drums containers, or hollow structures which have contained toxic or flammable substances shall, before welding, cutting, or heating is undertaken on them, either be filled with water or thoroughly cleaned of such substances and ventilated and tested. For welding, cutting and heating on steel pipelines containing natural gas, the pertinent portions of regulations issued by the Department of Transportation, Office of Pipeline Safety, 49 CFR Part 192, Minimum Federal Safety Standards for Gas Pipelines, shall apply.
- Before heat is applied to a drum, container, or hollow structure, a vent or opening shall be provided for the release of any built-up pressure during the application of heat.
- The user must inspect all leads, grounds, clamps, welding, machines, hoses, gauges, torches and cylinders before they are put into operation.
- All fittings, couplings and connections are to be “leak-free.”
- Provide adequate ventilation while cutting, welding, soldering or working on galvanized material and while working within enclosed shelters. All work must have a separate and adequate ground, pulled from the machine to the work location.
- At the end of each shift or when not in use for extended periods, the welding machine shall be turned off.
- An OSHA approved welding helmet which attaches to a hard hat must be worn. Use no less than a #9 filter with a plastic cover plate on both sides of the filter.
- Electric welding is prohibited from any metal ladder. Compressed gas cylinders must be secured vertically to an adequate support while in storage or transit. The protective cap must be on during storage and transit. Bottle shall be secured in a bottle cart while in use.
- Keep oil and grease away from oxygen regulators, hoses and fittings. Do not store wrenches, dies, cutters or other grease-covered tools in the same compartment with oxygen equipment.
- Approved cutting goggles must be worn. Use a least a #3 filter with a plastic cover plate on both sides of the filter.
- Gloves shall be worn to protect the hands and wrists. Flying chips and weld slag travel a considerable distance and may be dangerous to other personnel in the area, and shall require a screening or shielding. Gloves shall be worn when cleaning and brushing surfaces that are to be welded; also for wire brushing weld metal. Flame-resistant aprons of leather or other suitable material as protection against radiated heat and sparks shall be worn. Clothing should be free of oil and grease.
- Oxygen shall not be used to operate pneumatic tools, pressurize a container, blow-out lines or as substitute for compressed air or other gases.
- Cylinders and hoses shall be placed where they are not exposed to sparks and slag from a welding or cutting operation.

- Cylinders shall be raised to upper levels with approved rigging gear. Do not lift them with slings or by the protective cap.
- Do not strike an arc on cylinders or use them as rollers.
- When welding, or cutting where sparks are generated, a 30 minute firewatch should be provided at the end of the day to ensure there is no smoldering fire in the area.