

Hot Work: Cutting & Welding Safety

Operations that create a spark or flame such as welding, cutting, and soldering are referred to as hot work. Special precautions are necessary to perform hot work safely. When working in hot work situations, it's important to follow the proper guidelines for the type of work you are doing

General Steps for Cutting with Oxygen - Acetylene Torch:

- When attaching gauges to cylinders, be careful to not over tighten them.
- The desired pressure for the acetylene gauge should never exceed 7-8 pounds unless a heating tip is used.
- The desired pressure for the oxygen gauge shouldn't exceed 35-40 pounds up to a number 2 tip. Increase about 10 pounds per size number increase.
- Hoses on units should be equipped with backflow prevention and flash back arrestors. Remove electrodes from the holders when not in use.
- Proper Personal Protective Equipment (PPE) is required. Always wear an approved welding helmet with the correct shade of lens for welding or cutting processes. Never use sunglasses to weld. The minimum shade of burning goggles should be #5 green shade. Other PPE can include: leather welding gloves, sleeves, ribs, spats, and other protective leather.

When it comes to fire hazards, cutting and welding fires are usually caused by one of three things:

Sparks and slag: can fall through cracks or openings in floors, carry through heat ducts and under doors, fall on combustible material or on flammable liquids. Sparks can fly 35 feet horizontally.

Metal: being cut or welded can transmit heat by conduction or radiation and start a fire in adjacent or nearby combustibles.

Torch: the cutting torch accidentally coming close to, or in contact with, combustible material can be a ready source of ignition.

Welder's Flash or Arc Flash:

Photokeratitis (a.k.a. welder's flash or arc flash), is a painful eye condition and one of the many hazards associated with welding. It's caused by ultraviolet (UV) light produced by the welding arc which causes a very painful inflammation of the mucous membrane in the front of the eye. Symptoms of welder's flash can include:

- Pain ranging from a mild feeling of eye pressure to intense pain in severe instances
- Tearing/reddening of the eye and membranes around the eye
- Sensation of "sand in the eye" making it painful to blink
- Inability to look at light sources, extreme sensitivity to light
- Blurred vision, excessive tearing, and even temporary blindness

Handling of Cylinders:

- Avoid dragging or sliding cylinders, even for short distances. They should be moved using a suitable hand truck. Never lift them over your shoulder or carry by hand.
- When cutting or welding, protect cylinders from sparks, hot slag, or flame by separating them or use fire-resistant shields or blankets.

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- Do not move the product identification label or change the cylinder color.
- When returning empty cylinders, close the valve before shipment leaving some positive pressure in the cylinder. Replace all cylinder caps when returning the cylinder to storage.

Storage of Cylinders:

- When moving and storing cylinders, make sure the cylinder valves are closed, caps are on, and the space is dry. Always store cylinders in the upright position. Empty tanks should be separated from full tanks.
- Remove regulators unless secured on a cylinder cart and have a 10-pound ABC rated fire extinguisher on cart.
- Oxygen cylinder storage must be separated from flammable gas storage areas or combustibles by at least 20 feet or by a five-foot non-combustible wall.

The information and recommendations contained in this material have been obtained from sources believed to be reliable. However, SECURA accepts no legal responsibility for the accuracy, or completeness of such information. Additional safety and health procedures may be required under particular circumstances. Please contact your SECURA Risk Management Consultant for more information.

Hot Work: Cutting & Welding Safety Training

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Date: _____ Location: _____

Start Time: _____ End Time: _____

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I hereby certify that I presented and these people received the Cutting & Welding Safety training:

Trainer (Signature) _____