

WELDING

Protective Clothing

Personal protective equipment is mandatory for all employees while welding. This applies to the welder and any helpers. During arc welding, a welding helmet and the proper dark lens shade must be worn. Other equipment that will be worn as needed includes flameproof leather gloves, leggings, and aprons. High boots rather than oxfords are recommended. Bare skin, especially on the arms, shall be avoided because it will “sunburn”. Polyester clothing such as nylon jackets will not be worn when welding. Cotton is safer but the fabric will deteriorate quickly. Wool is recommended.

Electrical Hazards

1. The welding machine must be securely grounded.
2. The electrode holder shall be specifically designed for its use, and have capacity capable of carrying the maximum-rated current required by the electrodes in use. The work leads must be of sufficient size also.
3. The work leads will be checked for damaged insulation and secure attachment to the welding machine.
4. The ground lead must be securely attached and close to the work to prevent unwanted arcing.
5. Electrode holders left unattended shall not have a rod in them. Rod scraps shall be disposed of properly.
6. No splices are allowed in the worklead within 10' of the electrode holder. (This does not apply to an approved cable connector.)
7. Never dip an electrode holder in water to cool it.
8. The power supply to a welding machine shall be turned off if it is not used for any “appreciable length of time”, or when it is to be moved.

Ultraviolet Radiation

The arc welding process produces harmful ultraviolet rays. If unprotected, it will burn exposed skin and cause “flash burn” to the eyes. As mentioned earlier, personal protective equipment is required for the welder and helper. When possible, a welding booth or curtain shall be used to protect other workers from the ultraviolet rays. Remember, they do not have to directly view the arc to be hurt by it.

Fire and Explosions

Arc and welding produces intense heat. Temperatures up to 12,000 degrees Fahrenheit are possible and special precautions need to be taken to prevent deadly fires and explosions.

1. Never weld in an explosive atmosphere. If you suspect the presence of a gas, contact management to have it checked out before proceeding with any work. Certain dusts such as grain and flour are also flammable.
2. Never weld near stored ignitable materials or combustible debris. Never weld on a drum or barrel unless it has been thoroughly cleaned of any previously contained material, or is filled with water.
3. Never weld on a compressed gas cylinder.
4. When welding at a higher elevation, take precautions for falling sparks you produce.
5. Always have adequate fire extinguishing equipment immediately available where you are welding. If necessary, have additional personnel stand fire watch while work is being performed.

Toxic Gases and Fumes

The welding process produces various exhaust gases and fumes, depending on the materials you are working with. Simple precautions must be taken to avoid inhalation of toxic gases and fumes.

1. Keep your head out of the fume path. Your welding helmet will also help protect your breathing zone.
2. Provide ventilation, especially in welding booths, away from the welder.
3. Some materials are known to be toxic or carcinogens. Respirators are required when working with them. They include; galvanized metals, cadmium plated, lead, mercury, chrome, nickel, beryllium.
4. Supplied air respirators may be required when welding in confined spaces. Check with management.

Date