

Arc Welding Safety

Arc welders use a powerful electric arc to make and repair plain, coated, or treated metal items. Welders can be stationary, electric powered or portable, diesel/gas powered.

Getting Started

Install electric-powered arc welders to code. Ground equipment and place it on an independent circuit with the correct-sized fuse or circuit breaker. Overloading circuits or improper installation can lead to fire, a ground fault, or equipment failure. Mount a safety disconnect switch near the user work area.

Operate diesel/gas powered arc welders in well-ventilated areas to control combustion fumes. Do not add fuel to the engine while it is running or near open flame. Stop the engine and lockout the ignition before performing maintenance or repairs.

Always Wear Protective Gear

To protect your body from burns due to arc welding heat, ultraviolet light (UV), molten metal, and sparks, wear dark colored coveralls with long sleeves and pant legs. The coveralls should be fire retardant, cuffless, and pocketless with no holes, tears, or worn spots. A skull cap protects your head and hair. Leather gauntlet gloves and safety boots protect your hands and feet. Wear hearing protection in noisy environments and to keep sparks out of your ears.

Using Goggles, Helmets, and Shields

Goggles or safety glasses and welding helmets/shields protect your eyes from flying sparks, chipped slag, and UV light. Welding helmets and shields should be non-reflective and free of cracks, gaps, and openings. Use the correct filter setting for the power output of the arc welder. Weld inside a screened area to protect coworkers. Portable screens, shields, and anti-flash goggles can also be used to protect visitors and coworkers.



Preventing Fires and Explosions

Arc welders can reach temperatures greater than 10,000 degrees F, posing a fire and explosion hazard. Don't arc weld near flammables or combustibles. Avoid welding, cutting, or hot work on used drums, barrels, or tanks, where residual fumes can ignite and explode. Weld on a firebrick surface on concrete or other fire-resistant flooring surrounded by spark curtains. Fill cracks in the flooring to prevent sparks and hot metal

from entering and smoldering. Keep an ABC fire extinguisher, fire blanket, and first aid kit available at all times. It may be necessary to set a "fire watch" to ensure that a fire does not start. ➔

Avoiding Electric Shock

To avoid electric shock from arc welding, use an insulating mat when you weld steel or other conductive materials. If you are welding in a wet or damp area or perspiring heavily, wear rubber gloves underneath your leather gloves. Keep welding cables clean and intact and position them so they do not get sparks or hot metal on them.

Know Your Compounds and Metals

Use arc welders in well-ventilated areas. Welding metals may be hazardous or lead to an oxygen deficient atmosphere and are best handled in a ventilation hood exhausted to the outside. If you weld or cut metals with hazardous coatings or treatments use a supplied-air respirator or a respirator with a specialty cartridge to filter specific metal fumes. Use respiratory protection for galvanized items and metals, coatings, and fluxes that contain fluorine compounds, zinc, lead, beryllium, cadmium, and mercury. Some cleaning and degreasing compounds may also be hazardous.