

Electric arc welding is a common task in our industry. It's important to follow safe work practices to prevent serious hazards such as electric shock, severe burns, eye damage, respiratory and other health problems, and fires.

### 1. Avoid Becoming Part of the Circuit

- Clamp the work cable directly to the work, as close to the weld as is practical
  - If the work area is too large for the clamp, use a magnetic ground clamp

### 2. Stay Insulated from the Current

- Insulate yourself from the electrode circuit, from the work and from ground
- Avoid welding in wet environments
  - If the area is just damp or if you're sweating, use dry rubber welding mats
- Ensure all parts of the stinger leads are in good condition
  - Don't use damaged leads or equipment
  - Wear insulated gloves to change electrodes. Never use bare hands
- Arrange cables so they're protected from hot slag and sparks
  - Even insulated cables can melt and expose electrical wires

### 3. Prevent Burns

- Perform a pre-task safety plan
- Wear protective clothing
  - Wear leather boots that fit snugly and cover your ankles
  - Wear long pants with no cuffs to prevent hot slag getting trapped in your clothing
  - Many fitters and plumbers choose flame-resistant leggings or coveralls
  - Wear long-sleeved, untreated natural fiber (cotton or wool) shirts without pockets or cuffs
    - Flame-resistant fabrics specifically designed for hot work are best
  - Use heavy-duty welding gloves

### 3. Prevent Burns (continued)

- Choose the proper eye protection
  - Use the proper shade, filter plate or lens
    - Minimum shade for electric arc welding is 10, but you may need 12 or 14, depending on the work
    - Follow the manufacturer's recommendation or ask your supervisor
  - Wear safety glasses that wrap around the sides of your eyes underneath your welding helmet
- Protect the eyes of your coworkers
  - Use welding shields or screens to protect others from welder's flash
- Always wear a hardhat with your welding helmet

### 4. Use Proper Respiratory Protection

- Use good ventilation
  - Use local exhaust ventilation
  - If local exhaust ventilation is not adequate, use a point-of-operation ventilation system (smoke eater) or industrial-strength fans
- Position your body away from fumes
- Position your helmet so fumes can't rise up beneath it
- If work requires an air-purifying respirator:
  - Make sure you are trained, fit-tested and medically qualified for its use
  - Talk to your supervisor if you have any questions

### 5. Prevent Fires

- Keep the work area clean
  - Clear the area of combustible material such as paper, trash, oily rags and grease
- Protect floor and wall penetrations
- Keep a Class A-B-C fire extinguisher nearby
- Follow fire watch requirements of your company and the facility
- After completing work, make sure nothing in the area is smoldering for at least 30 minutes