




# Job Hazard Analysis Form



Task <b>Arc Welding</b>	
Completed by <b>Scott Brehmer and Frank Chavoya</b>	
Required PPE <b>Arc flash shield/helmet, leather welder's jacket, insulated gloves, apron steel-toed boots, and safety glasses</b>	
Date <b>9/28/17</b>	Notes <i>Need to verify local exhaust ventilation. Per Cal/OSHA - Inert-gas metal-arc welding on stainless steel shall not be performed unless exposed employees are protected either by local exhaust ventilation or by wearing supplied air respirators.</i>

Step	Picture	Step Description	Hazards	Controls
1		Perform pre-use equipment inspection	<ul style="list-style-type: none"> <li>• NA</li> </ul>	<ul style="list-style-type: none"> <li>• Complete CSUF training on electrical safety (NFPA 70E), fire extinguisher use and arc welder use</li> <li>• Inspect insulation, cables, connectors, grounding, and PPE</li> </ul>
2		Prepare for arc welding	<ul style="list-style-type: none"> <li>• Eye injury from arc flash</li> <li>• Fire or explosion</li> <li>• Health hazards from accumulation of toxic gases within the work area</li> <li>• Electric shock</li> </ul>	<ul style="list-style-type: none"> <li>• Remove flammable and combustible materials from the work area (minimum of 35 feet diameter clearance)</li> <li>• Ensure fire extinguishing equipment is maintained and immediately available in the work area</li> <li>• Evaluate material to be welded for flammability and toxicity</li> <li>• Secure the work area</li> <li>• Apply and maintain proper grounding</li> <li>• Open one or more facility doors and use fans as needed to ensure good ventilation</li> </ul>
3		Turn on power and unwrap wire	<ul style="list-style-type: none"> <li>• Tripping</li> </ul>	<ul style="list-style-type: none"> <li>• Keep wires untangled and away from standing work area</li> </ul>
4		Insert arc welding rod in handle	<ul style="list-style-type: none"> <li>• Pinching of fingers</li> </ul>	<ul style="list-style-type: none"> <li>• Keep fingers away from pinch points</li> </ul>

Step	Picture	Step Description	Hazards	Controls
5		Strike arc and perform welding	<ul style="list-style-type: none"> <li>• Eye injury from arc flash</li> <li>• Burns to skin</li> <li>• Fire or explosion</li> <li>• Health hazards from accumulation of toxic gases within the work area</li> <li>• Electric shock</li> <li>• Heat stress</li> </ul>	<ul style="list-style-type: none"> <li>• Wear arc flash shield/helmet, insulated leather gloves and welder's jacket, steel-toed boots, apron, half-face air purifying respirator with particulate filters</li> <li>• Complete CSUF Hot Work Permit</li> <li>• Secure the work area</li> <li>• Apply and maintain proper grounding</li> <li>• Use supplied air respirators where local exhaust ventilation is not available</li> <li>• Take breaks from welding hourly to prevent heat stress</li> <li>• Unit will not start with proper grounding</li> </ul>
6		Allow finished product to cool	<ul style="list-style-type: none"> <li>• Burn to skin</li> </ul>	<ul style="list-style-type: none"> <li>• Wear gloves</li> <li>• If appropriate spray finished product with cool water</li> <li>• Allow finished product to cool in a safe and secured location</li> <li>• Chalk mark the welded area "hot"</li> </ul>
7		Remove remainder of arc welding rod from handle and allow to cool	<ul style="list-style-type: none"> <li>• Burn to skin</li> </ul>	<ul style="list-style-type: none"> <li>• Wear gloves</li> <li>• Allow finished product to cool in a safe and secured location</li> <li>• Chalk mark the welded area "hot"</li> </ul>
8		Remove excess slag from finished product with chipping hammer	<ul style="list-style-type: none"> <li>• Eye damage from flying debris as hammer strikes</li> <li>• Injury to hand or fingers</li> </ul>	<ul style="list-style-type: none"> <li>• Wear safety glasses</li> <li>• Avoid striking hands or fingers with hammer</li> </ul>