### Task
Arc Welding

### Completed by
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### Required PPE
Arc flash shield/helmet, leather welder’s jacket, insulated gloves, apron steel-toed boots, and safety glasses

### Date
9/28/17

### Notes
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.

<table>
<thead>
<tr>
<th>Step</th>
<th>Picture</th>
<th>Step Description</th>
<th>Hazards</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><img src="image1.png" alt="Image" /></td>
<td>Perform pre-use equipment inspection</td>
<td>• NA</td>
<td>• Complete CSUF training on electrical safety (NFPA 70E), fire extinguisher use and arc welder use&lt;br&gt;• Inspect insulation, cables, connectors, grounding, and PPE</td>
</tr>
<tr>
<td>2</td>
<td><img src="image2.png" alt="Image" /></td>
<td>Prepare for arc welding</td>
<td>• Eye injury from arc flash&lt;br&gt;• Fire or explosion&lt;br&gt;• Health hazards from accumulation of toxic gases within the work area&lt;br&gt;• Electric shock</td>
<td>• Remove flammable and combustible materials from the work area (minimum of 35 feet diameter clearance)&lt;br&gt;• Ensure fire extinguishing equipment is maintained and immediately available in the work area&lt;br&gt;• Evaluate material to be welded for flammability and toxicity&lt;br&gt;• Secure the work area&lt;br&gt;• Apply and maintain proper grounding&lt;br&gt;• Open one or more facility doors and use fans as needed to ensure good ventilation</td>
</tr>
<tr>
<td>3</td>
<td><img src="image3.png" alt="Image" /></td>
<td>Turn on power and unwrap wire</td>
<td>• Tripping</td>
<td>• Keep wires untangled and away from standing work area</td>
</tr>
<tr>
<td>4</td>
<td><img src="image4.png" alt="Image" /></td>
<td>Insert arc welding rod in handle</td>
<td>• Pinching of fingers</td>
<td>• Keep fingers away from pinch points</td>
</tr>
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</table>
| 5    | ![Steps](ATE9222516.png) | Strike arc and perform welding    | • Eye injury from arc flash  
• Burns to skin  
• Fire or explosion  
• Health hazards from accumulation of toxic gases within the work area  
• Electric shock  
• Heat stress | • Wear arc flash shield/helmet, insulated leather gloves and welder’s jacket, steel-toed boots, apron, half-face air purifying respirator with particulate filters  
• Complete CSUF Hot Work Permit  
• Secure the work area  
• Apply and maintain proper grounding  
• Use supplied air respirators where local exhaust ventilation is not available  
• Take breaks from welding hourly to prevent heat stress  
• Unit will not start with proper grounding |
| 6    | ![Steps](ATE9222516.png) | Allow finished product to cool    | • Burn to skin                                                         | • Wear gloves  
• If appropriate spray finished product with cool water  
• Allow finished product to cool in a safe and secured location  
• Chalk mark the welded area “hot” |
| 7    | ![Steps](ATE9222516.png) | Remove remainder of arc welding rod from handle and allow to cool | • Burn to skin                                                         | • Wear gloves  
• Allow finished product to cool in a safe and secured location  
• Chalk mark the welded area “hot” |
| 8    | ![Steps](ATE9222516.png) | Remove excess slag from finished product with chipping hammer | • Eye damage from flying debris as hammer strikes  
• Injury to hand or fingers | • Wear safety glasses  
• Avoid striking hands or fingers with hammer |