Welders, Cutters, Solderers, and Brazers

SOC: 51-4121 • Career Profile Report

■ Key Facts

$51,000	457,300	+2.0%
Median Salary	Employment	Growth Rate

■ Requirements & Salary Range

Education: High school diploma

■ Automation Risk Assessment

Medium Risk - 38.0% probability of being automated in the next 10-20 years.

This job has some routine elements but still requires human judgment and interaction.

■■ Work-Life Balance

5.5/10 - Fair work-life balance

■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	8.4/10	**Investigative**	5.0/10
Artistic	3.8/10	**Social**	4.6/10
Enterprising	4.0/10	**Conventional**	8.0/10

■ Top Skills Required

Detail oriented, Manual dexterity, Physical stamina, Physical strength, Spatial-orientation skills

✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

■ Challenges

- Burnout Risk
- Rapid Technological Change

■ What They Do

Welders, Cutters, Solderers, and Brazers typically perform the following tasks: • Operate safety equipment and use safe work habits. • Examine workpieces for defects and measure workpieces with straightedges or templates to ensure conformance with specifications. • Weld components in flat, vertical, or overhead positions. • Detect faulty operation of equipment or defective materials and notify supervisors. • Recognize, set up, and operate hand and power tools common to the welding trade, such as shielded metal arc and gas metal arc welding equipment. • Select and install torches, torch tips, filler rods, and flux, according to welding chart specifications or types and thicknesses of metals. • Mark or tag material with proper job number, piece marks, and other identifying marks as required. • Determine required equipment and welding methods, applying knowledge of metallurgy, geometry, and welding techniques. • Prepare all material surfaces to be welded, ensuring that there is no loose or thick scale, slag, rust, moisture, grease, or other foreign matter. • Align and clamp workpieces together, using rules, squares, or hand tools, or position items in fixtures, jigs, or vises. • Connect and turn regulator valves to activate and adjust gas flow and pressure so that desired flames are obtained. • Position and secure workpieces, using hoists, cranes, wire, and banding machines or hand tools. • Melt and apply solder along adjoining edges of workpieces to solder joints, using soldering irons, gas torches, or electric-ultrasonic equipment. • Monitor the fitting, burning, and welding processes to avoid overheating of parts or warping, shrinking, distortion, or expansion of material. • Grind, cut, buff, or bend edges of workpieces to be joined to ensure snug fit, using power grinders and hand tools. • Weld separately or in combination, using aluminum, stainless steel, cast iron, and other alloys. • Chip or grind off excess weld, slag, or spatter, using hand scrapers or power chippers, portable grinders, or arc-cutting equipment. • Develop templates and models for welding projects, using mathematical calculations based on blueprint information. • Repair products by dismantling, straightening, reshaping, and reassembling parts, using cutting torches, straightening presses, and hand tools. • Clean or degrease parts, using wire brushes, portable grinders, or chemical baths.

*Generated by StartRight • Data from U.S. Bureau of Labor Statistics & O*NET*
Source: https://www.bls.gov/ooh/production/welders-cutters-solderers-and-brazers.htm