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When Sparks Fly

Demand for welding-related jobs in Minnesota is high, with projections indicating above-average growth in the field through the end of the decade.

Employers, particularly in southern Minnesota, have been voicing concern about the supply of welders for several years. Whether that is because of a skills gap in the occupation or due to other factors is uncertain. One thing is clear, though: With above average wages and wage offers, strong job demand statewide and low education requirements, welding is a career worth exploring for people with an interest in making things and working with their hands. Still, employers likely will have to take an active role if they want a trained and prepared workforce to fill future vacancies.

Demand

Demand for welders is high. Welders, cutters, solderers and brazers ranks 23rd among more than 600 occupations for employer demand.[1] Results from Minnesota's Job Vacancy Survey indicate that demand has picked up again since the recession. In the second half of 2010, the number of vacancies as well as the vacancy rate began to rise, although in 2012 both of these indicators leveled off somewhat.

Wage offers move up and down in this occupation, as can be seen in Table 1. This is based in part on the level of education and experience required by the welders, cutters, solderers and brazers vacancies reported. For example, wages and post-secondary educational requirements were significantly lower for the vacancies reported during second quarter 2012 (61 percent required post-secondary education) compared with fourth quarter 2012 (89 percent required post-secondary education). This also indicates that employers pay a premium for education and experience in this occupation.

TABLE 1

Job Vacancies: Welders, Cutters, Solderers and Brazers

	2nd Quarter			4th Quarter		
Year	Vacancies	Vacancy Rate	Median Hourly Wage Offer	Vacancies	Vacancy Rate	Median Hourly Wage Offer
2012	159	2.2%	$14.36	166	2.3%	$16.39
2011	395	5.3%	$14.83	381	5.1%	$16.51
2010	65	0.8%	$12.68	206	2.4%	$14.42
2009*	69	0.7%	$15.00	13	0.1%	$14.42
2008	199	2.3%	$15.00	127	1.5%	$16.00
2007	160	1.8%	$12.50	148	1.6%	$14.42
2006	398	4.5%	$14.35	212	2.4%	$13.00
2005	524	5.9%	$20.00	328	3.5%	$16.00
2004	406	4.3%	$11.00	209	2.3%	$12.00
2003	73	0.9%	$19.00	189	2.0%	$13.94
2002	87	1.0%	$12.00	112	1.3%	$14.00

*There is a break in the wage offer series between 2009 and 2010 due to a change in the estimation procedure.

Source: Job Vacancy Survey Minnesota Department of Employment and Economic Development

TABLE 2

2nd Quarter 2012 Manufacturing Employment					
	Employment				
Region	Manufacturing	Total, All	Percent Manufacturing	Welders, Cutters, Solderers and Brazers	Location Quotient
EDR 1 - Northwest	7,518	37,250	20.2%	420	4.19
EDR 6E- Southwest Central	10,054	51,545	19.5%	410	3.04
EDR 9 - South Central	19,255	102,581	18.8%	390	1.42
EDR 8 - Southwest	10,038	54,293	18.5%	330	2.24
EDR 10 - Southeast	36,618	233,872	15.7%	730	1.17
EDR 7W- Central	23,241	158,877	14.6%	700	1.59
EDR 6W- Upper Minnesota Valley	2,472	18,334	13.5%	120	2.43
EDR 4 - West Central	11,406	86,142	13.2%	480	2.14
EDR 7E- East Central	4,912	46,149	10.6%	220	1.81
EDR 11 - 7 County Twin Cities	161,907	1,597,543	10.1%	2,920	0.65
EDR 5 - North Central	5,994	60,582	9.9%	210	1.27
EDR 2 - Headwaters	2,211	29,918	7.4%	50	0.63
EDR 3 - Arrowhead	9,001	139,177	6.5%	340	0.87

LQs represent employment concentration in a region compared with employment concentration nationally. An LQ of 1.0 translates to a ratio of 1-to-1, meaning an occupation is as equally concentrated in the region as in the rest of the U.S. Above 1.0 equals greater concentration, below 1.0 equals less concentration.

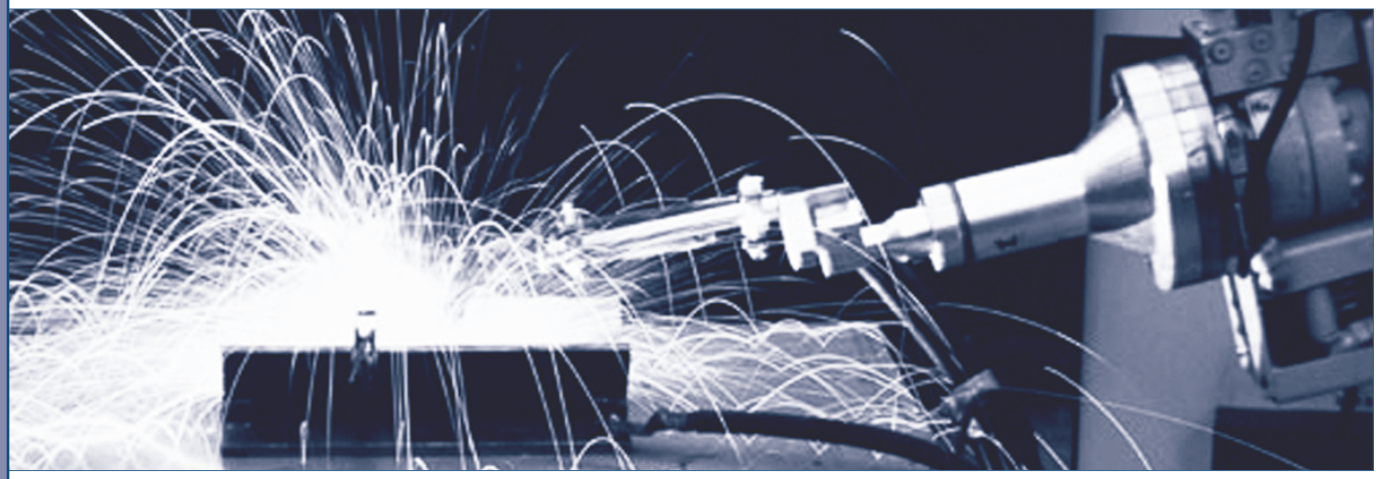
Source: DEED Quarterly Census of Employment and Wages, Occupational Employment Statistics

The long-term outlook in the field is also good, with projected growth well above average between 2010 and 2020.

If there is a mismatch between supply and demand for welders, cutters, solderers and brazers, it is likely to be highest in areas where the concentration for this occupation is greatest. Although location quotients (LQs) generally are used to compare relative concentrations of employment by industry, they can also be used to compare relative concentrations of employment by occupation. As Table 2 shows, LQs for welders, cutters, solderers and brazers are relatively high in most regions of Minnesota (anything over 1.0 is more highly concentrated than nationwide). This includes all of southern, central and northwestern Minnesota.

Supply

Although most employed welders, cutters, solderers and brazers have no formal training past high school, requirements are changing quickly. The latest data available show that 89 percent of job vacancies require post-secondary education and 16 percent require a certificate, although as noted above this varies from quarter to quarter.



Overall, however, the majority of vacancies in the field over the past two years have required post-secondary education and some work experience. Most post-secondary education programs in welding last one or two years, and many programs in Minnesota offer a certificate. Programs for welding exist in every economic development region in Minnesota.

While the educational requirements are not extensive and the opportunity to pursue these educational programs is available throughout the state, the fact that the majority of welders, cutters, solderers and brazers job vacancies require work experience is a major barrier to entry into the occupation. There are several apprenticeship programs in welding, but these certainly do not provide sufficient opportunity to train all the welders needed in Minnesota. If employers need experienced welders, they must take a more active role in providing opportunities for apprentices, internships and on-the-job training in this high-demand occupation.

[1] *Based on Occupations in Demand, DEED.*