

## **Welder**

Welders join or sever metals in beams, girders, vessels, piping and other metal components, make metal parts used in construction and manufacturing plants, and weld parts, tools, machines and equipment.

Welding usually involves applying heat to metal pieces to melt and fuse them together. In electric arc welding, heat is created as an electric current flows through an arc between the tip of the welding electrode and the metal. In gas welding, such as oxy-acetylene welding, the flame from the combustion of burning gases melts the metal. In both arc and gas welding, filler materials are melted and added to fill the joint and make it stronger. In resistance welding, the metal piece itself is melted as current flows through it, and no filler is added.

Welders use different welding processes and fillers depending upon the type of metal, its size and shape, and requirements for finished product strength. For a typical welding project, they:

- Develop patterns for projects or follow directions given in layouts, blueprints and work orders
- Clean, check for defects and shape component parts, sometimes using a cutting torch
- Weld parts together

Welders may also build up worn parts by welding layers of high-strength hard-metal alloys onto them.

### **Working Conditions**

Welders work in a wide variety of work environments. They may work outdoors on construction sites or indoors in production and repair shops. Travel may be required on jobs such as oilfield-related welding. A 40-hour work week is normal, but overtime is sometimes required.

There is some risk of injury involved working with torches and hot metals and the resulting sparks and toxic gases.



## Skills and Abilities

The work is most rewarding for those who enjoy building things and working with little direction or supervision.

To be successful in the trade, welders need:

- Manual dexterity
- Good vision (glasses are acceptable)
- Eye-hand coordination
- The ability to concentrate on detailed work
- Patience

## Working in Alberta

To work as a Welder in Alberta, a person must be a registered apprentice or a certified journeyman or hold a recognized trade certificate.

Welders learn their skills by registering with Alberta Apprenticeship and Industry Training to participate in apprenticeship training and, upon successful completion, are awarded the Alberta Journeyman Certificate.

A welder who holds a valid trade certificate from Alberta or from another Canadian province or territory may apply to write the Interprovincial Exam and, if successful, be granted a Red Seal under the Interprovincial Standards Program. The Red Seal is recognized throughout most of Canada.

A welder who holds a certificate that was issued by another recognized apprenticeship authority in Canada (province, territory or federal jurisdiction) may apply for an Alberta Equivalency document under the Equivalency Program.

Welders who:

- Hold a non-recognized Canadian credential in an Alberta-designated trade, OR
- Can demonstrate skills and experience in an Alberta-designated trade that meets standards set for journeymen in Alberta may be eligible to apply for trade certification under the Qualification Certificate Program.

Individuals possessing a valid Alberta Journeyman Certificate, an Alberta Occupational Certificate, or a credential that is recognized as equivalent to an Alberta trade or occupational certificate are eligible to receive a Blue Seal business credential after completing the necessary requirements.



## Apprenticeship Training

The term of apprenticeship for a welder is 3 years (three 12-month periods) including a minimum of 1500 hours of on-the-job training and 8 weeks of technical training each year.

- An applicant who previously completed courses of study or work experience related to the Welder trade or holds a related journeyperson certificate and has the employer's recommendation, may qualify for credit that could reduce the term of apprenticeship.
- A person who has previous training or work experience in the trade and wants to determine their level of skill and knowledge for entry or advanced standing in an apprenticeship program may apply for a Prior Learning Assessment.
- A high school student can become an apprentice and gain credits toward apprenticeship training and a high school diploma at the same time under the Registered Apprenticeship Program (RAP)

### **To learn the skills required of a Welder in Alberta and be issued an Alberta Journeyman Certificate, a person must:**

- Satisfy the entrance requirements or pass the entrance exam
- Find a suitable employer who is willing to hire and train an apprentice

*Most employers prefer to hire high school graduates and may select apprentices from among their current employees.*

- With their employer, complete the Apprenticeship Application and Contract and submit it to an Apprenticeship and Industry Training Office
- Pay the non-refundable application fee as identified on the application noted above
- Complete the required on-the-job training
  - during on-the-job training, apprentice welders earn at least 60 percent of the journeyperson wage rate in their place of employment in the first year, 75 percent in the second, and 90 percent in the third year.
- Complete the required technical training each year
- Enroll in technical training
  - select an educational institution that offers training for Welder apprentices, and a time to attend training
  - determine requirements for enrolling at the selected institution, and forward completed enrollment form to the selected institution



- Review books and materials required for training
- Successfully complete all required exams
  - review the Apprenticeship and Industry Training Policy on Cheating

Apprentices may attempt the Interprovincial Exam in the final period of their apprenticeship training and, if successful, be granted a Red Seal.

- Review the Apprenticeship and Industry Training Policy on Cheating

When apprentices attend technical training, they are required to pay the applicable tuition fee and purchase course supplies.

Grants, scholarships and other financial assistance may be available. For more information contact an Apprenticeship and Industry Training Office.

### **Interprovincial Standards (Red Seal) Program**

#### **To qualify for a Red Seal, a person must:**

- Hold a valid trade certificate in a trade that participates in the Interprovincial Standards (Red Seal) Program:
  - an Alberta trade certificate or completion of apprenticeship certificate, OR
  - a journeyperson or completion of apprenticeship certificate issued by another Canadian province or territory
- For applications based on Alberta certificates
  - complete the Interprovincial (Red Seal) Examination Application - Alberta Certified (no application fee is required)
  - submit the application to an Apprenticeship and Industry Training Office
- For applications based on non-Alberta certificates
  - complete the Interprovincial (Red Seal) Examination Application - Canadian Certified
  - submit the application to an Apprenticeship and Industry Training Office
  - pay the non-refundable application fee as identified on the application form



- Prepare for the exam
  - review the Apprenticeship and Industry Training Policy on Cheating
  - review available resource materials
- Successfully complete the required exam

## Equivalency Program

**To qualify for an Equivalency document based on a recognized credential, a person must:**

- Have a valid trade credential issued by another Canadian province or territory or by the Department of National Defence
  - completion of apprenticeship certificate issued before the trade began participation in the Interprovincial Standards (Red Seal) Program, OR
  - completion of apprenticeship certificate issued in a trade that does not participate in the Interprovincial Standards (Red Seal) Program, OR
  - other recognized trade credential
- Complete the Equivalency Application and deliver it in person to an Apprenticeship and Industry Training Office. Government issued photo identification is required.
- Pay the non-refundable application fee as identified on the application noted above

*A person who has a recognized certificate, as described above, does not require an Alberta Equivalency document to work in the trade in Alberta. However, some employers may require an Alberta Equivalency document as proof that the certificate is equivalent to the requirements of the trade in Alberta.*



## Qualification Certificate Program

**To qualify for a Qualification Certificate *based on Canadian credentials*, a person must:**

- Have a valid trade credential issued by another Canadian province or territory or by the Department of National Defence, and the credential is NOT recognized as being equivalent to a trade certificate issued by Alberta
- Complete the Qualification Certificate – Canadian Credentials Application and submit it to an Apprenticeship and Industry Training Office.
- Pay the non-refundable application fee as identified on the application noted above
- Prepare for the exam(s)
  - review the Apprenticeship and Industry Training Policy on Cheating
  - review available resource materials
- Successfully complete the required exam(s)

**To qualify for an Alberta Qualification Certificate *based on work experience*, a person must:**

- Have at least 6,750 hours and 54 months of 'hands-on' work experience as a welder
- There are exceptions if the applicant has a recognized journeyperson certificate in a related trade
- A certified welder (2nd class) must have at least 2,340 hours and 18 months of 'hands-on' work experience as a welder
- A certified boilermaker must have at least 4,680 hours and 36 months of 'hands-on' work experience as a welder
- A certified structural steel and plate fitter must have at least 4,680 hours and 36 months of 'hands-on' work experience as a welder

*Time spent on supervisory or foreman duties, counter work, heading the tool crib, or on a training course is NOT counted as 'hands-on' work experience.*

- Complete the Qualification Certificate - Work Experience Application and submit it to an Apprenticeship and Industry Training Office
- Pay the non-refundable fees as identified on the application noted above



*This application fee covers the verification and assessment of the applicant's work experience hours/months as well as one attempt at the Qualification Certificate theory examination. The Qualification Certificate practical examination requires a separate fee as identified on the application noted above.*

- Prepare for the exam(s)
- Review the Apprenticeship and Industry Training Policy on Cheating
- Review available resource materials
- Successfully complete the required exam(s)

