

## Ironworker

Ironworkers fabricate, construct and join scaffolding, structural steel buildings, bridges, ornamental ironwork and pre-cast structures.

They erect structural steel components, reinforce steel, post tension tendons, install conveyors and robotic equipment, and sometimes perform reconstructive work on existing structures.

In general, ironworkers:

- Read blueprints and specifications to lay out the work
- Unload and stack steel units so each piece can be hoisted as needed  
Erect and install scaffolding, construction cranes, derricks and other hoisting equipment
- Assemble rigging (cables, pulleys, hooks) to move heavy equipment and materials
- Attach cables from a crane or derrick and direct crane operators with hand signals or radios
- Position steel units, align holes and insert temporary bolts
- Check the alignments and join steel parts by bolting or tack welding them with an electric arc process
- Assemble and erect pre-fabricated metal structures
- Select, cut, bend, position, and secure steel bars or wire mesh in concrete forms to reinforce the concrete
- Install ornamental and other structural metalwork such as curtain walls, metal stairways, railings and power doors
- Unload and install pre-cast components

## Working Conditions

Ironworkers generally work outdoors in teams or crews in remote locations as well as urban areas. Their work is physically strenuous and often dangerous. They often work at great heights and must rely on one another to use good judgment as well as safety equipment and procedures to reduce the risk of injury from falling or from falling objects. Adverse weather conditions such as rain, snow or high winds can shut down projects for days at a time.



## Skills and Abilities

Successful ironworkers enjoy developing their expertise by doing precise work in a broad range of industries and locations. They enjoy the outdoors and often like travelling and working with different crews.

To be successful in their trade, ironworkers need:

- The ability to interpret blueprints
- An understanding of safe work practices and the knowledge to safely operate the tools of the trade
- To be able to work at heights
- The ability to lift in excess of 25 kilograms
- Very good muscular coordination, agility and balance
- A willingness to travel to various work sites
- An inclination to work cooperatively with others
- The ability to act quickly and decisively in emergencies

## Employment and Advancement

Most ironworkers are employed by construction contractors, but some are employed in industries such as metal fabricating, oil and gas production, iron and steel production, electric utilities and rail transport. Very few ironworkers are self-employed. In the construction industry, ironworkers work on a project-to-project basis and frequently travel long distances from job to job.

Employment is seasonal, and employment prospects change with the economic climate, particularly with the volume of commercial and industrial construction projects.

Journeyman wage rates vary, but generally range from **\$22 to \$30 an hour plus benefits**.

Experienced ironworkers may advance to supervisory positions such as foreman and construction superintendent.

## Working in Alberta

To work as an Ironworker in Alberta, a person must be a registered apprentice, an Alberta-certified journeyman, or hold a valid recognized credential.



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

An ironworker 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 Red Seal Program. The Red Seal is recognized throughout most of Canada.

**An ironworker who holds a valid recognized credential that does not have a Red Seal may apply for:**

- an Alberta trade certificate under the Qualification Certificate Program
- an Alberta Equivalency document under the Equivalency Program.

Ironworkers who:

- Hold a credential that is not recognized or is no longer valid in an Alberta-designated trade, OR
- Can demonstrate their experience, skills and knowledge in an Alberta-designated trade, and meet the standards and requirements established by the Alberta Apprenticeship and Industry Training Board may be eligible to apply for trade certification under the Qualification Certificate Program.

Individuals possessing a valid Alberta Journeyman Certificate, an Alberta Qualification Certificate, an Alberta Occupational Certificate, or a valid recognized credential are eligible to receive a Blue Seal business credential after completing the necessary requirements.

## **Apprenticeship Training**

The term of apprenticeship for an ironworker is 4 years (four 12-month periods) including a minimum of 1500 hours of on-the-job training and 6 weeks of technical training each period.

- An applicant who previously completed courses of study or work experience related to the Ironworker trade or holds a related journeyperson certificate and has the employer's recommendation, may qualify for credit that could reduce the term of apprenticeship. (see Accreditation Information for a list of accredited courses)
- 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 Ironworker in Alberta and be issued an Alberta Journeyman Certificate, a person must:**

- Satisfy the entrance requirements or pass the entrance exam (see Entrance Level Competencies, Exam Counselling Sheet, Entrance Exam Study Guide, and Entrance Exam Support Materials List), or Ironworker - Metal Building Systems Erector trade certificate
- 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 ironworkers earn at least 60 percent of the journeyperson wage rate in their place of employment in the first year, 70 percent in the second, 80 percent in the third, and 90 percent in the fourth year.
- Complete the required technical training each year
- Enroll in technical training
  - select an educational institution that offers training for Ironworker 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 see Financial Assistance or 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 Qualification Certificate – Recognized Credential Application
  - 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 (see Exam Counselling Sheets)
  - review the Apprenticeship and Industry Training Policy on Cheating
  - review available resource materials (see Resource Materials - Ironworker )
- Successfully complete the required exam

## Equivalency Program

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

- Have a valid recognized credential that does not have an Interprovincial Standards Red Seal
- 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 holds a valid recognized credential, as described above, does not require an Alberta Equivalency document to work in the trade in Alberta. However, some employers may require Alberta documentation as proof that the holder is allowed to work in the trade or that the holder's credential is recognized.*

## **Qualification Certificate Program**

**To qualify for a Qualification Certificate *based on a recognized credential*, a person must:**

- Hold a valid recognized credential that does not have an Interprovincial Standards Red Seal
- Complete the Qualification Certificate – Recognized Credential 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) (see Exam Counselling Sheets)
  - review the Apprenticeship and Industry Training Policy on Cheating
  - review available resource materials (see Resource Materials - Ironworker)
- Successfully complete the required exam(s)

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

- Have at least 9,000 hours and 72 months of 'hands-on' work experience as an ironworker
- There are exceptions if the applicant has a recognized journeyperson certificate in a related trade
  - a structural steel and plate fitter must have at least 4,500 hours and 36 months of 'hands-on' work experience as a ironworker
  - a certified boilermaker must have at least 4,500 hours and 36 months of 'hands-on' work experience as a ironworker
  - an ironworker – metal building systems erector must have at least 4,500 hours and 36 months of 'hands-on' work experience as a ironworker
  - an ironworker – structural/ornamental must have at least 3,600 hours and 24 months of 'hands-on' work experience as a ironworker



- an ironworker – rebar must have at least 4,500 hours and 36 months of 'hands-on' work experience as a ironworker

*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 review the Application Guide) 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 review of the application, the assessment and confirmation of the applicant's work experience hours/months, the administration of the applicant's demonstration of competency, and 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 (see Resource Materials - Ironworker)
- Successfully complete the required exam(s)

