Now and Tomorrow **Excellence in Everything We Do** 

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**Essential Skills and Apprenticeship** 

# Essential Skills for Success as an Ironworker

Ironworkers use Essential Skills to complete trade-related tasks. Use this fact sheet to:

- learn how Essential Skills are used on the job;
- find out the skills you need to succeed in your trade; and
- help prepare yourself for your career.



#### Reading



- Read cutting and placement instructions on drawings.
- Read bulletins from employers and unions for new procedures for fall protection, accident reporting, and scaffolding installation.
- Read comments in job safety inspection reports to learn about job site hazards.
- Read and become familiar with health and safety policies.
- Read trade publications and union newsletters to learn about training opportunities and new products.

### **Document Use**



- Locate material codes and placement coordinates from stamps on steel structures.
- Read warning signs for overhead wires, crane operations, and high voltages.
- Locate data in tables and lists such as beam weights, sling and bolt sizes, and materials needed for the job.
- Locate information in Material Safety Data Sheets (MSDS) to understand hazardous products located in work areas.
- Locate dimensions and angles on drawings to understand the construction sequence.
- Review assembly drawings to verify the order and size when loading onto crane chokers.



#### **Numeracy**



- Measure the lengths, widths, heights and placement angles of columns, beams, curtain walls, trusses and rebar for reinforced concrete.
- Calculate distances and angles of structures for accurate placing of materials.
- Compare measurements to specified dimensions to ensure steel columns, beams, wiring and fabricated and reinforced structures are correctly fabricated and installed.
- Estimate supply quantities such as bolts, welding rods and extension cords required for a particular job.
- Estimate the weights of materials to determine sling sizes.

### Writing



- Write notes in logbooks to record instructions provided by supervisors.
- Write notes on drawings to create records of inconsistencies in measurements.
- Describe safety concerns on safety inspection forms.

#### Oral Communication



- Discuss work locations, job assignments, required tools, measurement locations and supplies with supervisors and co-workers.
- Discuss installation sequences and techniques with other ironworkers.
- Discuss the selection of tools and supplies for different types of jobs and how and where to tie off on structures with other ironworkers.
- Maintain ongoing discussions with crane operators to ensure safety.

#### Working with Others



- Coordinate job tasks with other tradespeople.
- Work as a team with engineers, supervisors and other ironworkers when troubleshooting faults in structures and materials.

## Thinking



- Find alternative ways to get steel structures into buildings when they do not fit through building openings.
- Think of ways to work around faults in materials and supplies.
- Select which tools and supplies to take to job sites.
- Decide to stop work when work areas are unsafe.
- Choose methods and tools for fabrication jobs of varying types and sizes
  while considering factors such as crane limitations, working temperatures,
  dimensions of structures being installed and existing built structures.
- Visually inspect items such as safety ropes, harnesses and tools to judge for safety.
- Evaluate the quality of materials.
- Assess the efficiency and suitability of installation sequences.
- Remember instructions from supervisors and job details such as bolt sizes, weld depths and cut angles.
- Remember details of successful sequences of operations.

## Computer Use



- Use communication devices such as computers and two-way radios to send, receive and gather information.
- Use electronic measuring instruments.

## Continuous Learning



- Attend training for mandatory recertification offered by employers and local unions.
- Read union newsletters and industry publications to become familiar with trends and new technologies.
- Learn through work experiences and from discussions with supervisors and co-workers.

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# For more information on the Interprovincial Standards Red Seal Program, visit

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