Job Roles and Responsibilities in Canada

Welders

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Introduction

Welders work in many different locations in Manitoba. It is important to know what educational and skill requirements are needed to be a welder. The information provided in this booklet will increase your awareness of the roles and responsibilities of welders. A detailed description of job duties, employment requirements, skills, education and training are all included in this package.

Description

Welders use manual and semi-automatic welding equipment to weld different types of metals together (ferrous/non-ferrous), following blueprints and welding process specifications. They may specialize in certain types of welding, such as mobile welding, aerospace precision welding, manufacturing welding and pipeline construction welding. They repair worn parts of metal by welding on extra layers.

Welding machine operators use welding machines, such as spot, butt and seam resistance or gas/arc welding machines, to make and/or repair metal parts.

Welding and brazing machine operators also start up, shut down, adjust and monitor robotic welding production lines and may adjust tooling or welding heads according to work specifications. Welders and Related Machine Operators are classified under the National Occupation Classification (NOC) # 9510.

Example Titles

- Aviation welding technician
- Electric arc welder
- Journeyman/woman welder
- Laser welding operator
- Pressure vessel welder
- Production welder
- Spot welder
- Welder
- Welder apprentice
- Welder-fitter

Work Environment

People in this job work for companies that make structural steel, platework, boilers, heavy machinery, aircraft, ships, transportation and other metal products. Welders also work for welding contractors and welding shops.

Picture one shows welders working on a metal frame of a building.

Picture two shows a welder working in a metal pipeline.

Picture three shows an assembly line welder.[1]

[1] Pictures retrieved March 11, 2006 from www.superstock.com

Where they find work

Metal fabrication & Machinery	25% (e.g., Franklin Industries, Metal-Tech Industries, Pritchard Metalfab)
Repair Services	12% (e.g., Kleysen Transport, Tommy's Welding)
Construction	7% (e.g., Capitol Welding, FWS Construction)
Other Transportation Equipment	5% (e.g., Fort Garry Industries, Motor Coach Industries, New Flyer Industries)

Note: The examples show some of the companies in Winnipeg, MB.

Language Requirements

Welders should be able to communicate clearly in English to do their job well. It is very important to employers that you have good oral communication skills so you can communicate with them and with your co-workers. Welders must also be able to read and follow blueprints.

It is important to note that language entrance requirements and test requirements vary in different colleges. Contact the colleges to see what is required.

Recommended Canadian Language Benchmark Levels for Industrial Welding[2]

Listening	Speaking	Reading	Writing
7	7	6	6

[2] www.gov.mb.ca
Note: This occupation/training has not been formally benchmarked.

Recommended TOEFL scores[3]

Paper Based	Computer Based	Internet Based
550	**213**	**80**

For those individuals where English is an Additional Language (EAL), it is recommended that you take a Canadian Language Benchmark Placement Test to determine your level of English, and to see which English classes are available to you. Contact the Winnipeg English Language Assessment and Referral Centre for an appointment:

Winnipeg English Language Assessment and Referral Centre
400 - 275 Portage Avenue
Winnipeg, Manitoba R3B 2B3
Phone: 204-943-5387

Skills

Production welders and related machine operators require the following skills and abilities:

- Able to *communicate clearly*
- Able to *read and follow blueprints*
- Enjoy working with machinery and metals
- Physical strength and endurance
- Able to concentrate on detailed work for long periods
- Able to bend and work in awkward positions
- Good vision and hand-eye coordination
- Good concentration

[3] These are the current TOEFL entrance requirements at some colleges.

- Know how to work safely
- Able to work alone or in a group

Skilled welders should also have:

- Knowledge of metals, relevant product codes, regulations and laws
- Knowledge of applied mathematics (e.g., fractions, measuring) and geometry
- Computer skills
- Ability to plan and think in steps and three-dimensionally
- Ability to keep up to date with changing technology

Do you have many of these skills?

Main Duties

Welders perform some or all of the following duties:

- Read and interpret blueprints or welding process specifications.
- Use manual or semi-automatic welding equipment to fuse metal pieces using processes such as gas tungsten arc (TIG or GTAW), gas metal arc (MIG or GMAW), flux-cored arc (FAW), plasma arc (PAW), shielded metal arc (SMAW), oxy-acetylene (OAW), resistance welding and submerged arc welding (SAW).
- Operate manual or semi-automatic flame-cutting equipment.
- Operate metal shaping machines, such as brakes, shears and other metal straightening and bending machines.
- Repair worn parts of metal products by welding on extra layers.
- Welders may specialize in certain types of welding, such as custom fabrication, ship building and repair, aerospace precision welding,

pressure vessel welding, pipeline construction welding, structural construction welding or machinery, and equipment repair welding.

Welding, brazing and soldering machine operators perform some or all of the following duties:

- Operate previously set up welding machines, such as spot, butt and seam resistance or gas and arc welding machines, to fabricate or repair metal parts.
- Start up, shut down, adjust and monitor a robotic welding production line.
- Assist with the maintenance and repair of welding, brazing and soldering equipment.

Do you think you would enjoy doing the work described above?

The Importance of Safety in Canada

Safety in the workplace is very important in Canada. If your employer sees you are not listening to the safety rules, you may be fired immediately.

The company is responsible for:

- Training employees how to work safely
- Telling employees about things that are dangerous in the workplace
- Giving employees safety equipment and make sure they wear it

The employee is responsible for:

- Following the company's safety rules (sometimes called "policies")
- Wearing safety equipment
- Telling the supervisor if they see something that is dangerous

- Not doing anything that they think is unsafe

It is *your* responsibility to ask questions when you don't understand.

For more information: www.safemanitoba.com

Terms & Conditions

- Welders and related machine operators work both indoors and outdoors, depending on the project.
- They may work in small spaces or at significant heights on scaffolds or platforms.
- The work can be physically demanding. They may be required to lift heavy objects and work in a variety of awkward positions, while bending, stooping or standing to perform work overhead.
- Welders wear safety equipment such as steel-toed boots, goggles, gloves and hoods with protective lenses. *They may be required to supply their own safety boots and masks.*
- They may be exposed to noxious fumes, blinding light and hot materials.
- Welding can be seasonal. There is more work for construction welders in the summer when the construction is at its peak.
- Shop welders are not affected by seasonal factors and usually work about 40 hours per week. Working overtime and on weekends may be required during busy times and when deadlines are approaching.
- Production welders and machine operators working for manufacturing companies may be required to work shifts (days, evenings, nights).

Earnings

As you learn the skills of your trade, you are paid a wage that increases over the length of your apprenticeship.

In Manitoba[4]

$29,120.00 per annum - starting (1st Level Apprentice)

$37,440.00 per annum - average

$58,240.00 per annum – high (Red Seal Certified)

Average in Canada

Hourly wage: $17.33

Education / Training

Apprenticeship

A formal apprenticeship program (Welding) is available. To become a certified Welder in Manitoba, you must complete an apprenticeship that combines on-the-job (practical) experience and in-school (technical) training.

You must be at least 16 years of age and have a grade 12 or equivalent high school academic standing with credits in mathematics and science.

[4] Note these numbers refer to 2008. These may vary from year to year.

Network, network, network![5]

Here are some tips on how to find an employer who is participating in an apprenticeship program.

FIND AN EMPLOYER

You must find a qualified employer who will give you practical training and hire you full time. Approach this like any other job search. Remember that 80% of all job openings are never advertised. **The employer must employ a certified journeyperson or a designated trainer who will mentor you throughout your on-the-job training*. ***

- Go to where welders are employed
- Ask your career counsellor for advice. Check with joint labour/management training boards and trade associations to see if they know of any employers who are looking for an apprentice.
- Tell people you know that you are looking for a job. Carry a resume with you everywhere. Ask to speak with a manager/supervisor and leave your resume with them even if they are not hiring.
- Get the names and phone numbers of the employers and managers/supervisors whom you've contacted. Contact them again after a couple of weeks. That tells them that you really want the job.
- Once you have found an employer to hire you, you'll need to **register as an apprentice**. Either you or your employer must complete Apprenticeship Application/Agreement, which will require information and signature from both of you. If you are not a Canadian Citizen or permanent resident, a work permit and study permit will also be required. To confirm specific details of your apprenticeship training, arrange to meet with the trade specific Apprenticeship Training Coordinator who will outline:
    - The length of the training program
    - The skills that must be learned
    - The pay (wages)

[5] www.gov.mb.ca/tce/apprent/future/find_employer.html

- The apprenticeship for Industrial Welder is three years. Training and in-school instruction is a minimum 1,600 hours per year. About 80% of your time is spent learning practical on-the-job skills under the supervision of a journeyperson. The remaining 20% consists of learning the theoretical and technical aspects of your trade.
- When you successfully complete all the practical and technical requirements of apprenticeship training and **score 70%** or better on your final examination, you will receive a Certificate of Qualification, confirming your status as a journeyperson. You also qualify for inter-provincial or "Red Seal" standing that, subject to local regulations, allows you to work across Canada where "Red Seal" certificate is recognized.
- If you now work in this field and want to become a fully qualified journeyperson, you can receive credit for previous job experience and training and qualify for certification by passing a theory and practical Trades Qualification Exam. If you do not meet exam requirements, upgrading courses are available.

The following post-secondary institutions offer related training:

- Assiniboine Community College (ACC) - Industrial Metals Fabrication Certificate Program
- ACC, Continuing Education Division - Welding Oxy and Arc and Advanced Welding
- University College of the North - Welding Certificate Program
- Red River College - Welding Certificate Program
- Winnipeg Technical College - Industrial Welding Certificate Program
- A number of high schools in Manitoba also offer programs in Machining Technology/Welding.

Employment Requirements

Welders must usually have some secondary school for entry-level positions.

At the skilled trade levels, welders should have completed high school and may be required to have college programs or apprenticeship training.

Career Paths

A production welder may be an entry-level position.

Welders with basic skills can advance to higher level welding jobs with additional training and experience. They may become welding technicians, supervisors, inspectors or instructors. Progression to supervisory positions is possible with experience. Some experienced welders open their own repair shops.

Welders with “Red Seal” trade certification are qualified to work in other provinces.

Employment Opportunities

- Employment opportunities for welders and related machine operators are expected to be good in the 2008 to 2012 period. Employment in 2008 is estimated at 3,800.
- Employment demand changes. A significant number of major construction projects are planned in Manitoba between 2008 and 2012 that will require welders. As well, the outlook for manufacturing production, particularly aerospace and bus manufacturing remains positive.
- In manufacturing, technological advances, such as computer-controlled and robotically controlled welding machinery, are replacing many of the routine welding jobs. At the same time, new technologies are generating more uses for welding and creating more opportunities for those who

possess skills in advanced technological applications and have an understanding of computerized machinery. Welders working on construction projects or in equipment repair will not be affected by technology change to the same extent because their jobs are not as easily automated.

Professional Associations and Unions

- Canadian Welding Bureau -- Western Region Office, Edmonton, AB, 780-465-7788 or 1-800-503-0793, (Alberta/BC/Manitoba/Saskatchewan) www.cwbweb.org *Contact for booking tests.*
- Manitoba Aerospace Human Resources Committee, 1425 Whyte Avenue, Winnipeg, MB, R3E 1V7, www.manitoba-aerospace.mb.ca, (204) 772-0003
- Canadian Welding Association, 525-2085 Hurontario St., Mississauga, ON, L5A 4G1, www.cwa-acs.org
- The Apprenticeship Branch, 1010-401 York Avenue, Winnipeg, MB, R3C 0P8, 945-3337

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