

**MICHIGAN CIVIL SERVICE COMMISSION  
JOB SPECIFICATION**

**WELDER**

**JOB DESCRIPTION**

Employees in this job perform as welders responsible for the repair and maintenance of bridges; or manufacturing, and/or repairing equipment for state agencies.

There are two classifications in this job.

**Position Code Title – Welder-E**

Welder E9

This is the experienced level. The employee performs a full range of welder assignments and uses independent judgment in making decisions where alternatives are determined by established procedures, methods, and practices.

**Position Code Title – Welder-A**

Welder 10

This is the advanced level. The employee functions as either a crew leader, overseeing the work of lower-level Welders and performing journey-level welder assignments, or as a senior worker performing the most complex welding assignments.

**JOB DUTIES**

**NOTE:** The job duties listed are typical examples of the work performed by positions in this job classification. Not all duties assigned to every position are included, nor is it expected that all positions will be assigned every duty.

Performs emergency and routine repairs and maintenance on bridges throughout the state. This involves welding, mechanical repair, lubrication, sandblasting, and painting damaged bridge elements.

Manufacturers and/or repairs equipment for state agencies.

Studies sketches, diagrams, or parts to be repaired or fabricated and determines operations to be performed and materials required.

Lays out, positions, aligns, or otherwise sets pieces in place preparatory to welding, and measures dimensions for conformance to specifications.

Cleans and degreases parts to be welded using wire brushes, grinders, or solvents.

Sets up, adjusts, and operates such welding equipment as electric arc welders, gas shielded arc welders, and gas welders; selects proper electrodes, gas orifices, filter

**WELDER**  
**PAGE No. 2**

rods, and/or torch tips based on type of material being welded and desired bead size and penetration.

Fabricates and assembles complete devices or pieces of equipment by using metal forming and cutting tools such as presses, punches, brakes, pipe benders and threaders, and drills to bend, shape, and cut parts to be welded and bolted, screwed, or riveted together.

Requisitions materials and tools required in the work and inspects them upon receipt for conformance to specifications.

Cleans and maintains tools and equipment used in the work.

Trains and directs lower-level personnel or prisoner crews in the operation and use of welding equipment and related tasks.

Performs related work as assigned.

**Additional Job Duties**

**Welder 10 (Crew Leader)**

Assigns work to lower-level Welders, Trades Helpers, or prison inmates.

Provides instruction and training in the proper methods and processes necessary to carry out welder assignments.

Reviews job performance by observing and critiquing work techniques and completed assignments.

Develops plans and estimates for welding projects; includes determining time, equipment, and human and material resources needed to complete the work.

Prepares written reports on on-going projects and on the condition of machinery.

**Welder 10 (Senior Worker)**

Regularly handles the most complex and difficult assignments in the work area.

Resolves problems and answers questions for other workers.

Performs other related work identified as complex by the agency.

**JOB QUALIFICATIONS**

**Knowledge, Skills, and Abilities**

**NOTE:** Considerable knowledge is required at the experienced level and thorough knowledge is required at the advanced level.

**WELDER**  
**PAGE No. 3**

Knowledge of materials, tools, and processes used in gas, arc, and heli-arc welding.

Knowledge of the welding qualities and properties of a variety of metals.

Knowledge of occupational hazards and safety precautions applicable to the welding trade.

Skill in the welding of ferrous and nonferrous metals.

Ability to read and independently work from plans, sketches, diagrams, and blueprints.

Ability to train, instruct, and direct others in welding work.

Ability to communicate effectively.

**Additional Knowledge, Skills, and Abilities**

**Welder 10 (Crew Leader)**

Ability to organize and coordinate the welding activities of a specific work area.

Ability to allocate work to other workers in the work area.

Ability to determine priorities.

**Welder 10 (Senior)**

Ability to perform the most complex assignments.

**Working Conditions**

Work assignments may require statewide travel and working conditions and may involve all weather elements.

Some jobs require an employee to work on high structures.

Some jobs require an employee to be exposed to hazardous work environments.

**Physical Requirements**

The job duties require an employee to bend and reach for extended periods.

The job duties require an employee to bend or stoop in confined spaces.

The job duties require an employee to climb high structures and work at unusual heights (50' to 500').

The job duties require an employee to walk or stand for long periods.

**Education**

Educational level typically acquired through completion of high school.

**Experience**

**Welder E9**

Four years of experience as a combination welder using arc and gas welding equipment.

**Welder 10**

Five years of experience as a combination welder using arc and gas welding equipment, including one year equivalent to a Welder E9.

**Special Requirements, Licenses, and Certifications**

Some positions within this class series are assigned job duties that may require possession of the Commercial Driver's License (CDL) issued by the Secretary of State as required by Public Act 346 of 1988 to operate a designated state vehicle.

**NOTE:** Equivalent combinations of education and experience that provide the required knowledge, skills, and abilities will be evaluated on an individual basis.

**JOB CODE, POSITION TITLES AND CODES, AND COMPENSATION INFORMATION**

**Job Code**

WELDER

**Job Code Description**

Welder

**Position Title**

Welder-E

Welder-A

**Position Code**

WELDERE

WELDERA

**Pay Schedule**

A31-010

A31-012