



154 Meadowlark Health Centre  
156 Street & 87 Avenue  
Edmonton, Alberta T5R 5W9  
Tel (780) 429-4761  
Fax (780) 425-4274  
Toll Free 1-800-493-5446

## Physical Demands Analysis

### Ironworker

Prepared for:  
Alberta Construction Association

<b>Job Title:</b>	Ironworker	<b>Assessment Location:</b>	Edmonton, AB	<b>Data Collection Date:</b>	November 10, 2020
-------------------	------------	-----------------------------	--------------	------------------------------	-------------------

<b>Completed By:</b>	Joanna Taets Von Amerongen, BKin	<b>Submitted on:</b>	January 29, 2021
----------------------	----------------------------------	----------------------	------------------

<b>Disclaimer:</b>	The Physical Demands noted in this report may vary depending on company and location. Please contact the company directly to confirm this physical demands analysis is an accurate representation of the specific job title for the specific location.
--------------------	--

<b>Work Schedule:</b>	<b>Shift Duration:</b> 5 days/week, 9 hours/day <b>Break Schedule:</b> Total of 1 hour break per day / 2-15 minute breaks, 1-30 minute break <b>Shift Rotation:</b> Not applicable <b>On call is required:</b> No <b>Overtime required:</b> No; but may be available dependent on work volume and project deadlines
-----------------------	---

<b>Education / Experience:</b>	<b>Education required:</b> 3 year apprenticeship program with 6 week technical training period each year. <b>Hours required for position:</b> 1,620 hours per year <b>Tickets that may be required (not limited to):</b> Fall protection, Elevated Work Platform (EWP) First Aid, WHMIS, Construction Safety Training Systems (CSTS) and Basic Safety Orientation (BSO).
--------------------------------	--

<b>Labour Provider:</b>	N/A
-------------------------	-----

<b>Job Overview:</b>	As an Ironworker the worker is required to assemble and install walls, railings, supports and metal framing to new or pre-existing buildings.		
	% of shift	Job Task	Task Description
	7-10%	Safety/tailgate meeting	<ul style="list-style-type: none"><li>Reviewing previous progress on site and plan outlined for the shift, identifying safety hazards on site and communicating with crew.</li><li>Completing Field Level Hazard Assessment (FLHA)</li></ul>
	5-8%	Preparing work area	<ul style="list-style-type: none"><li>Retrieving equipment, tools and material from work vehicle to work area on site.</li><li>Completed throughout the day as needed. This can include metal framing that is located away from the work area on site.</li></ul>
		Completing ironwork	<ul style="list-style-type: none"><li>Completing outlined plan for the day. This can include preparing brick angles for installation, installing brick angles</li></ul>

			according to foreman instruction or creating repairs as needed. <ul style="list-style-type: none"> <li>Transportation of equipment/scaffolding from various points on site may be required depending on progress in the project plan.</li> </ul>
	5-7%	Work area clean up	<ul style="list-style-type: none"> <li>Cleaning and organizing equipment, tools and materials as well as the work area.</li> </ul>

<b>Equipment/ Tools:</b>	<ul style="list-style-type: none"> <li>Hammer</li> <li>Tape measure (2 lbs.)</li> <li>Level (2 lbs.)</li> <li>Impact gun (21 lbs.)</li> <li>Grinder (6 lbs.)</li> <li>Welding machine (13 lbs.)</li> <li>Cables (15 lbs.)</li> <li>Welding rods (10 lbs.)</li> <li>Brick angle (~100 lbs.)</li> <li>Bessy clamps (~ 4lbs.)</li> <li>Zoom boom</li> <li>Swing stage</li> </ul>
------------------------------	---

<b>Exposures / Environment:</b>	<ul style="list-style-type: none"> <li>Outdoor elements (cold, heat, wind, rain, snow, etc.)</li> <li>Dust fumes</li> <li>Zinc exposure</li> <li>UV light exposure</li> </ul>
-------------------------------------	---

<b>Personal Protective Equipment Required:</b>	<ul style="list-style-type: none"> <li>Hard hat</li> <li>Steel toed boots</li> <li>Gloves</li> <li>Foam safety eyewear (fectoggle)</li> <li>Safety vest or high visibility stripes</li> <li>Long sleeves and pants</li> </ul>
<b>Personal Protective Equipment as Required:</b>	<ul style="list-style-type: none"> <li>Fall arrest</li> <li>Face shield (welding)</li> <li>Half mask (while drilling)</li> <li>Hearing protection</li> </ul>

NOC STRENGTH LEVEL KEY	
Strength Level	Definition
<b>Limited (Lim)</b>	Up to 5 kg (11 pounds)
<b>Light (L)</b>	5 kg to 10 kg (11 – 22 pounds)

<b>Medium (M)</b>	10 kg to 20 kg (22 – 44 pounds)
<b>Heavy (H)</b>	Greater than 20 kg (44 pounds plus)

*\*Strength Level Key based on the National Occupational Classification*

FREQUENCY KEY		
Frequency	% of Workday	Hours – Based on 8 hour Workday
<b>Not Required (N/R)</b>	0%	0
<b>Rarely (R)</b>	1 – 5%	<25 min/day
<b>Occasionally (O)</b>	6 – 33%	25 min to 2 hours 40 min/day
<b>Frequently (F)</b>	34 – 66%	2 hours 41 min to 5 hours 17 min/day
<b>Constantly (C)</b>	67 – 100%	5 hours 18 min to 8 hours/day

*\*Frequency Key based on WCB Alberta Recommendations*

Job Demand	Frequency / NOC Strength Level					Details/ Measurements
	N/R	R	O	F	C	
Material Handling:						
Floor to Waist Level Lifting		H*		L		Materials including brick angle (up to 100 lbs.) and scaffolding, various hand and power tools (impact gun-21 lbs., welding machine-13 lbs., hammer, tape measure-2 lbs., level-2 lbs., etc.), cables (15 lbs.), during work area preparation and clean up.
Knee to Waist Level Lifting		H*		L		Materials including brick angle (up to 100 lbs.) and scaffolding, various hand and power tools (impact gun-21 lbs., welding machine-13 lbs., hammer, tape measure-2 lbs., level-2 lbs., etc.), cables (15 lbs.), during work area preparation and clean up.
Waist to Waist Level Lifting		H*		L		Materials including brick angle (up to 100 lbs.), various hand and power tools (impact gun-21 lbs., welding machine-13 lbs., hammer, tape measure-2 lbs., level-2 lbs., etc.), cables (15 lbs.), during work area preparation and clean up.
Waist to Chest Level Lifting		H*		L		Materials including brick angle (up to 100 lbs.), various hand and power tools (impact gun-21 lbs., welding machine-13 lbs., hammer, tape measure-2 lbs., level-2 lbs., etc.), cables (15 lbs.), during work area preparation and clean up.
Waist to Shoulder Level Lifting		H*		L		Materials including brick angle (up to 100 lbs.), various hand and power tools (impact gun-21 lbs., welding machine-13 lbs., hammer, tape measure-2 lbs., level-2 lbs., etc.), cables (15 lbs.).

<b>Waist to Overhead Level Lifting</b>		H*	L			Materials including brick angle (up to 100 lbs.), various hand and power tools (impact gun-21 lbs., welding machine-13 lbs., hammer, tape measure-2 lbs., level-2 lbs., etc.), cables (15 lbs.).
<b>Front Carry</b>			H*			Materials including brick angle (up to 100 lbs.).
<b>Right / Left-handed Carry (Dominant Hand)</b>			H*			Buckets of material (up to 50 lbs.), various hand and power tools (impact gun-21 lbs., welding machine-13 lbs., hammer, tape measure-2 lbs., level-2 lbs., etc.).
<b>Shoulder Carry</b>		H*	L			Materials including brick angle (up to 100 lbs.), fire extinguishers, bundles of cables (15 lbs.).
<b>Static Pushing/Pulling (Force)</b>			H			Pushing away from the wall (using level, measuring wall, etc.)
<b>Dynamic Pushing/Pulling (Force)</b>			H*	M		Moving stands throughout site, adjusting brick angle (push: 106.0 lbs., pull: 104.5 lbs.), adjusting bessey clamps on brick angle to assist in moving, adjustments while using scaffolding.

\*For manual handling tasks above 50 lbs., it is recommended that the worker uses either a 2 person lift or assistive equipment (e.g. crane, forklift, zoom boom etc.).

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Upper Extremity Work:						
Hand Gripping					X	Gripping brick angles, bessey clamps, various hand and power tools, welding machine/rods, stands, scaffolding, etc.
Pinch Gripping			X			Adjusting brick layer during installation on building, operating swing stage.
Upper Extremity Coordination					X	Working with brick angles, bessey clamps, various hand and power tools, welding machine/rods, stands, scaffolding, etc.
Reaching Forward				X		Setting up and while using welding machine, during installation of brick angles.
Overhead Shoulder Level Reaching		X				During work area preparation and clean up, lifting brick angle (when unable to use zoom boom or assistive equipment).
Below Shoulder Level Reaching					X	During preparation and installation of brick angle, using welding machine, during work area preparation and clean up.
Throwing	X					Not required.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Positional Work:						
Trunk Flexion (Bending)			X			Attaching cable to welding machine, cleaning cables, during installation of brick angle, work area preparation and clean up.
Trunk Rotation (Twisting)			X			During installation of brick angle, adjusting brick angle and ensuring brick angle is level, work area preparation and clean up.
Kneeling			X			Working with lower level equipment including welding machine set up, lower level placed brick angle, work area preparation and clean up.
Crawling		X				During lower level installation (ground level).
Crouching			X			Checking numbers on brick angle/steel, installation of lower level brick angle, work area preparation and clean up.
Squatting		X				Picking up brick angle (2 person lift), installing brick angle (during placement).
Neck Flexion				X		Checking surroundings on site, during preparation, installation, repair phases, work area preparation and clean up.
Neck Extension			X			Checking surroundings on site, during preparation, installation, repair phases, work area preparation and clean up.
Neck Rotation				X		Checking surroundings on site, during preparation, installation, repair phases, work area preparation and clean up.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Static Work:						
Sitting			X			During breaks, hand rail installs.
Static Standing				X		During preparation and installation, repair phases of brick angle, safety/tailgate meeting.
Balancing				X		Throughout site (uneven surfaces), while on swing stage.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Ambulation:						
Walking: Level Surfaces			X			Throughout site (likely indoors).
Walking: Uneven Surfaces				X		Throughout site (outdoors).

<b>Walking: Slopes</b>		X				Dependent on site.
<b>Jumping</b>	X					Not required.
<b>Running</b>	X					Not required.

<b>Job Demand</b>	<b>Frequency</b>					<b>Details/Measurements</b>
	<b>N/R</b>	<b>R</b>	<b>O</b>	<b>F</b>	<b>C</b>	
<b>Climbing:</b>						
<b>Stairs</b>			X			To access various floors throughout site.
<b>Ladder</b>			X			To access higher level material (brick angle, leave, etc.) on ground level.
<b>Other</b>			X			Climbing onto zoom boom, swing stage.



## PHOTOS OF TASKS AND WORK ENVIRONMENT

**Figure 1:** Brick angle placed on site for Ironworker's use.



**Figure 2:** Ironworkers on swing stage working together to install brick angle.



**Figure 3:** Ironworker observing as coworker installs brick angle using welding technique.



Physical Demands Analysis  
Job Title: Ironworker  
Date Prepared: January 6, 2021  
Prepared for: Alberta Construction Association



If you have any questions, and/or would like to discuss this assessment and report further, I can be reached at (780) 429-4761.

Sincerely,

---

**Joanna Taets Von Amerongen, BKin**  
**Kinesiologist**



[illegible]

### Validation Agreement

<b>Job Title:</b>	Ironworker
<b>Data Collection Date:</b>	November 10, 2020

We the undersigned have reviewed the Physical Demands Analysis for this position and agree that the physical demands documented in this report are representative of the true demands of the tasks associated with the job title as assessed on the date listed above.

<b>Completed by:</b>	Joanna Taets Von Amerongen, BKin	Lifemark Clinician Name and Credentials
<b>Approved by:</b>	Bryan Kondo, Superintendent	Management Representative
<b>Approved by:</b>		Worker Representative
<b>Approved by:</b>		Labour Provider Representative