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## Physical Demands Analysis

### Commercial Plumber

Prepared for:  
 Alberta Construction Association

<b>Job Title:</b>	Commercial Plumbing	<b>Assessment Location:</b>	Red Deer, AB	<b>Data Collection Date:</b>	August 13, 2020
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<b>Completed By:</b>	Ryan Pauls MSc, CEP	<b>Submitted on:</b>	October 15, 2020
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<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.
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<b>Work Schedule:</b>	<p><b>Shift Duration:</b> 5 days/week, 10 hours/day; may vary</p> <p><b>Break Schedule:</b> Total of 1 hour break per day</p> <p><b>Shift Rotation:</b> Not applicable</p> <p><b>On call is required:</b> No</p> <p><b>Overtime required:</b> No; but may be available</p>
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<b>Education / Experience:</b>	<p><b>Education required:</b> 4 Year apprenticeship (2 months school, 10 months work)</p> <p><b>Hours required for position:</b> 40-50 hours per week</p> <p><b>Tickets that may be required (not limited to):</b> Fall protection, Ground Disturbance, Elevated Work Platform (EWP) machinery use, Confined Space, First Aid, WHMIS, Construction Safety Training Systems (CSTS) and Basic Safety Orientation (BSO), hot work permits, POST.</p>
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<b>Labour Provider:</b>	N/A
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<b>Job Overview:</b>	As a Commercial Plumber, the worker is required to complete the following job tasks:		
	% of shift	Job Task	Task Description
	Up to 100%	Ground Work	<ul style="list-style-type: none"> <li>Consists of preparing the ground for piping/drains. Main water lines will be connected as well as drains hooked up. This may include work such as digging, jack hammering, cutting and connecting pipe.</li> <li>As these are large commercial jobs this can last months depending on the size of the job.</li> </ul>
	Up to 100%	Upper Rough In/Water Lines	<ul style="list-style-type: none"> <li>Consists of installing water lines from source to where fixtures will be installed.</li> <li>Installing valve systems and using pipes varying from light plastic to heavy black pipe.</li> <li>Installing drainage line and venting.</li> </ul>

			<ul style="list-style-type: none"> <li>• May involve low level work at ground height as well as high level work on ladders.</li> <li>• Work may take up to months depending on the job size.</li> </ul>
	Up to 100%	Finishing plumbing/Fixtures	<ul style="list-style-type: none"> <li>• Installing fixtures such as sinks, toilets, etc. to roughed in water lines.</li> <li>• Installing shut off valves.</li> <li>• Installing drainage to fixtures.</li> </ul>

<b>Equipment/ Tools:</b>	<ul style="list-style-type: none"> <li>• Grinder</li> <li>• Reciprocating saw</li> <li>• Piper cutter</li> <li>• Shovels</li> <li>• Laser level</li> <li>• Prybars</li> <li>• Chop saw</li> <li>• Various drills (hammer drill, impact, right angle, etc.)</li> <li>• Grinder</li> <li>• Band saw</li> <li>• Torch</li> <li>• Pex cutters and crimpers</li> <li>• Cutter/reamer</li> <li>• Drop head die</li> <li>• Pipe wrench</li> <li>• Roll groover</li> <li>• Come along</li> <li>• Air compressor</li> <li>• Drainage pipe</li> <li>• Black pipe</li> <li>• Pex pipe</li> <li>• Valves</li> </ul>
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<b>Exposures / Environment:</b>	<ul style="list-style-type: none"> <li>• Dust (drywall, concrete, etc.)</li> <li>• Heat</li> <li>• Cold</li> <li>• Noise</li> <li>• Fumes</li> </ul>
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<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>• Safety eyewear</li> </ul>
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	<ul style="list-style-type: none"> <li>• Safety vest or high visibility stripes</li> <li>• Pants</li> <li>• Ear protection</li> <li>• N95 or half mask</li> <li>• Fall protection</li> </ul>
<b>Personal Protective Equipment as Required:</b>	<ul style="list-style-type: none"> <li>• N95 or half mask</li> <li>• Fall protection</li> <li>• Face shield (when using grinder, chop saw, etc.)</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	
<b>Material Handling:</b>						
<b>Floor to Waist Level Lifting</b>			H	M	L	Lifting tools, piping and fixtures from the ground. These can all be greater than 44 pounds. Large fixtures such as tubs would require a partner or multiple partner lift.
<b>Knee to Waist Level Lifting</b>			H	M	L	As above
<b>Waist to Waist Level Lifting</b>		M				Passing tools and materials.
<b>Waist to Chest Level Lifting</b>		H	M	L	L	Various tools, materials and piping.
<b>Waist to Shoulder Level Lifting</b>		H	M	L	L	Various tools, materials and piping.

Waist to Overhead Level Lifting		H	M	L	L	Various tools, materials and piping.
Front Carry			H	L	L	Tools, materials, pipe, fittings, fixtures.
Right / Left-handed Carry (Dominant Hand)		H			L	Tool box, pipe, tools.
Shoulder Carry		H			L	Some piping and tools.
Static Pushing/Pulling (Force)	X					
Dynamic Pushing/Pulling (Force)		H		M	L	Joining pipe, pushing cards, wrenches, drilling.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Upper Extremity Work:</b>						
Hand Gripping					X	Tools, material, pipe.
Pinch Gripping		X				Nuts, bolts, fittings.
Upper Extremity Coordination					X	
Reaching Forward		X				
Overhead Shoulder Level Reaching				X		
Below Shoulder Level Reaching				X		
Throwing	X					

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Positional Work:</b>						
Trunk Flexion (Bending)					X	When completing groundwork.
Trunk Rotation (Twisting)					X	Groundwork/digging.
Kneeling				X		Groundwork, low level rough in.
Crawling		X				
Crouching				X		Groundwork, installing fixtures/fittings.
Squatting				X		As above.
Neck Flexion				X		
Neck Extension				X		
Neck Rotation				X		

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Static Work:</b>						



<b>Sitting</b>		X				
<b>Static Standing</b>					X	
<b>Balancing</b>					X	Potential uneven ground during groundwork, ladders, stairs.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Ambulation:</b>						
<b>Walking: Level Surfaces</b>					X	
<b>Walking: Uneven Surfaces</b>					X	During groundwork.
<b>Walking: Slopes</b>		X				Loading docks.
<b>Jumping</b>	X					
<b>Running</b>	X					

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Climbing:</b>						
<b>Stairs</b>			X			
<b>Ladder</b>				X		
<b>Other</b>				X		Scaffolding, scissor lift.

**PHOTOS OF TASKS AND WORK ENVIRONMENT**

**Figure 1: Ground work/Rough in**



Requires cutting cement and installing water line or drainage line.

**Figure 2: Upper Rough In**



Bringing water line up to where fixtures will be installed.

**Figure 3: Overhead Water Line Work**



**Figure 4: Fixture to be installed.**





Installing water lines overhead, requires use of ladder as well as various tools.

**Figure 5: Valves and fittings installed.**



**Figure 6: Heavier black piping which must be installed overhead.**



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,

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**Ryan Pauls MSc, CEP**  
**Clinical Exercise Physiologist**



### Validation Agreement

<b>Job Title:</b>	Commercial Plumber
<b>Data Collection Date:</b>	August 13, 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>	Ryan Pauls, CEP	Lifemark Clinician Name
<b>Approved by:</b>	Herman Bruin	Management Representative
<b>Approved by:</b>		Worker Representative
<b>Approved by:</b>		Labour Provider Representative