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## Physical Demands Analysis

HVAC Installer

Prepared for:  
 Alberta Construction Association

<b>Job Title:</b>	HVAC Installer	<b>Assessment Location:</b>	Red Deer, AB	<b>Data Collection Date:</b>	August 24, 2020
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<b>Completed By:</b>	Joanna Taets Von Amerongen, BKin	<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, 8 hours/day; may vary depending on volume</p> <p><b>Break Schedule:</b> Total of 1 hour break per day / 2-15 minute breaks with 1-30 minute lunch break.</p> <p><b>Shift Rotation:</b> Not applicable</p> <p><b>On call is required:</b> No</p> <p><b>Overtime required:</b> Yes; depending on volume</p>
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<b>Education / Experience:</b>	<p><b>Education required:</b> 4 year apprenticeship program specializing in sheet metal work.</p> <p><b>Hours required for position:</b> 800 hours 1<sup>st</sup> year, approximately 1500 hours 3 remaining years (approximately 5300 hours total).</p> <p><b>Tickets that may be required (not limited to):</b> Fall protection, First Aid, Basket Lifts, WHMIS, Construction Safety Training Systems (CSTS) and Basic Safety Orientation (BSO).</p>
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<b>Labour Provider:</b>	N/A
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<b>Job Overview:</b>	As an HVAC Installer, the worker is required to install HVAC systems into new and existing builds on site.		
	% of shift	Job Task	Task Description
	Up to 10%	Driving to site and unloading	<ul style="list-style-type: none"> <li>Driving to the site for the shift in and surrounding areas.</li> <li>Unloading all required materials, tools and equipment on site.</li> </ul>
	5%	Review and preparation for site	<ul style="list-style-type: none"> <li>Reviewing progress and plan for the shift including specific materials required, process for installation, etc.</li> <li>Marking all necessary areas on site in preparation for HVAC install.</li> </ul>
	Up to 88%	Cutting materials	<ul style="list-style-type: none"> <li>After reviewing site, cutting all materials to appropriate sizes for site.</li> </ul>

	Up to 88%	Fill in	<ul style="list-style-type: none"> <li>Once materials are cut, installing all metal to pre-markings on site.</li> </ul>
	5%	Clean up and loading materials from site	<ul style="list-style-type: none"> <li>Completing site clean up including loading all required materials, tools and equipment from site.</li> </ul>
	Up to 12%	Driving to shop (as necessary) to unload materials	<ul style="list-style-type: none"> <li>Driving to the shop to unload all materials, tools and equipment with a work truck.</li> </ul>

<b>Equipment/ Tools:</b>	<ul style="list-style-type: none"> <li>Circular skill saw (up to 29 lbs.)</li> <li>Sozo drill (up to 3 lbs.)</li> <li>Hole saw (13 lbs.)</li> <li>Hammer</li> <li>Drill (6 lbs.)</li> <li>Snips</li> <li>Tool belt</li> <li>Knives</li> <li>Crimper (up to 6 lbs.)</li> <li>Measuring tape</li> <li>Ladder (24 lbs.)</li> <li>Funnel elbows (box=up to 52 lbs.)</li> <li>5 feet of 5" snap lock – bundles of 15 (up to 40 lbs.)</li> <li>Full 4" snap lock (24 lbs.)</li> <li>Coroplast tin (up to 15 lbs.)</li> <li>Tin (up to 10 lbs.)</li> </ul>
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<b>Exposures / Environment:</b>	<ul style="list-style-type: none"> <li>Heat</li> <li>Wind</li> <li>Cold</li> <li>Saw Dust</li> <li>Primer 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 glasses</li> <li>Safety vest or high visibility stripes</li> <li>6 inch sleeves and long pants</li> </ul>
<b>Personal Protective Equipment as Required:</b>	



NOC STRENGTH LEVEL KEY	
Strength Level	Definition
Limited (Lim)	Up to 5 kg (11 pounds)
Light (L)	5 kg to 10 kg (11 – 22 pounds)
Medium (M)	10 kg to 20 kg (22 – 44 pounds)
Heavy (H)	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
Not Required (N/R)	0%	0
Rarely (R)	1 – 5%	<25 min/day
Occasionally (O)	6 – 33%	25 min to 2 hours 40 min/day
Frequently (F)	34 – 66%	2 hours 41 min to 5 hours 17 min/day
Constantly (C)	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	L		Loading and unloading materials on site: funnel elbows (52 lbs.), snap locks (up to 40 lbs.), ladder (24 lbs.), etc. Lifting equipment during cutting and installing: hole saw (13 lbs.), drill (6 lbs.), sozo drill (up to 3 lbs.), crimper (6 lbs.), knives, etc.
<b>Knee to Waist Level Lifting</b>			H	L		Loading and unloading materials on site: funnel elbows (52 lbs.), snap locks (up to 40 lbs.), ladder (24 lbs.), etc. Lifting equipment during cutting and installing: hole saw (13 lbs.), drill (6 lbs.), sozo drill (up to 3 lbs.), crimper (6 lbs.), knives, etc.
<b>Waist to Waist Level Lifting</b>			H	L		Loading and unloading materials on site: funnel elbows (52 lbs.), snap locks (up to 40 lbs.), ladder (24 lbs.), etc. Lifting equipment during cutting and installing: hole saw (13 lbs.), drill (6 lbs.), sozo drill (up to 3 lbs.), crimper (6 lbs.), knives, etc.
<b>Waist to Chest Level Lifting</b>				M		Lifting materials and tools required during cutting and installation including snap lock (up to 24 lbs.), elbows, hole saw (13 lbs.), drill (6 lbs.), sozo drill (up to 3 lbs.), etc.

<b>Waist to Shoulder Level Lifting</b>				M		Lifting materials and tools required during cutting and installation including snap lock (up to 24 lbs.), elbows, hole saw (13 lbs.), drill (6 lbs.), sozo drill (up to 3 lbs.), coroplast (up to 15 lbs.), etc.
<b>Waist to Overhead Level Lifting</b>				M		Lifting materials and tools required during cutting and installation including snap lock (up to 24 lbs.), elbows, hole saw (13 lbs.), drill (6 lbs.), sozo drill (up to 3 lbs.), coroplast (up to 15 lbs.), etc.
<b>Front Carry</b>			H			Carrying materials on site: funnel elbows (52 lbs.), snap locks (up to 40 lbs.), ladder (24 lbs.), circular saw (29 lbs.), etc.
<b>Right / Left-handed Carry (Dominant Hand)</b>			M			Carrying various tools including drill (6 lbs.), hole saw (13 lbs.), sozo drill (3 lbs.), ladder (24 lbs.), etc. around site.
<b>Shoulder Carry</b>			Lim			Carrying tin (up to 10 lbs.) around site.
<b>Static Pushing/Pulling (Force)</b>	X					Not required.
<b>Dynamic Pushing/Pulling (Force)</b>			Up to Heavy NOC Level			Pushing sozo, hole saw, hammer, drill, materials into marked spaces, etc.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Upper Extremity Work:</b>						
<b>Hand Gripping</b>					X	Accessing equipment/tools and materials from site, using various tools (hammer, drill, sozo, crimper, cutting, while snapping, snips, knife, circular saw), during installation, marking and cutting of materials.
<b>Pinch Gripping</b>			X			Applying tin tape onto tin, while using drill.
<b>Upper Extremity Coordination</b>					X	Accessing equipment/tools and materials from site, using various tools (hammer, drill, sozo, crimper, cutting, while snapping, snips, knife, circular saw), during installation, marking and cutting of materials.
<b>Reaching Forward</b>					X	During cutting, marking and installing of materials, while using tools, loading and unloading on site.
<b>Overhead Shoulder Level Reaching</b>				X		Installing snap lock and tin at higher levels, hammering pipe, installing bath fan or HRV, using various tools (drills, sozo, hole saw), etc.

<b>Below Shoulder Level Reaching</b>				X		Marking lower levels including boot holes, during cutting, crimping tin, installing at lower levels, using various tools (circular saw, sozo, drill, hole saw, etc.).
<b>Throwing</b>		X				During clean up (plywood, duct, tin).

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Positional Work:</b>						
<b>Trunk Flexion (Bending)</b>			X			Marking site, during installation at lower levels.
<b>Trunk Rotation (Twisting)</b>			X			Accessing narrow areas on site, installing duct in basement.
<b>Kneeling</b>			X			Marking various boot holes on site.
<b>Crawling</b>		X				In crawl spaces (~every 2-3 years).
<b>Crouching</b>			X			Marking various boot holes on site.
<b>Squatting</b>	X					Not required.
<b>Neck Flexion</b>				X		Marking, cutting and installing, during unloading and loading, site clean up, checking surroundings, etc.
<b>Neck Extension</b>				X		Marking, unloading and loading, installing at higher levels.
<b>Neck Rotation</b>			X			Marking and installing, checking surroundings.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Static Work:</b>						
<b>Sitting</b>		X				During breaks.
<b>Static Standing</b>				X		Cutting and installation on site.
<b>Balancing</b>				X		While using ladder (higher levels), to access unfinished sites.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Ambulation:</b>						
<b>Walking: Level Surfaces</b>				X		Throughout the site (interior).
<b>Walking: Uneven Surfaces</b>			X			Throughout the site (exterior).
<b>Walking: Slopes</b>		X				Dependent on site.
<b>Jumping</b>	X					Not required.
<b>Running</b>	X					Not required.



Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Climbing:</b>						
<b>Stairs</b>			X			Climbing stairs throughout site to access various levels.
<b>Ladder</b>				X		Accessing higher levels to mark and install, using ladder in garage (if no stairs installed).
<b>Other</b>			X			Onto vehicle to access equipment during loading and unloading.

**PHOTOS OF TASKS AND WORK ENVIRONMENT**

**Figure 1: Using hole saw to install duct.**



**Figure 2: Drilling to install duct.**



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



**SITE SPECIFIC JOB DEMAND ADDITIONS:**

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Site Specific Job Demand:</b>						
<b>Vibration</b>				X		While using various tools (drills, saws, etc.).



### Validation Agreement

<b>Job Title:</b>	HVAC Installer
<b>Data Collection Date:</b>	August 24, 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
<b>Approved by:</b>	Herman Bruin	Management Representative
<b>Approved by:</b>		Worker Representative
<b>Approved by:</b>		Labour Provider Representative