



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

Air Conditioning Installer

Prepared for:
 Alberta Construction Association

Job Title:	Air Conditioning Installer	Assessment Location:	Red Deer, AB	Data Collection Date:	August 24, 2020
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Completed By:	Joanna Taets Von Amerongen	Submitted on:	October 15, 2020
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Disclaimer:	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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Work Schedule:	<p>Shift Duration: 5 days/week, 8 hours/day; may vary depending on volume</p> <p>Break Schedule: Total of 1 hour break per day / 2-15 minute breaks with 1-30 minute lunch break.</p> <p>Shift Rotation: Not applicable</p> <p>On call is required: No; optional</p> <p>Overtime required: Yes; depending on volume and residential/commercial</p>
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Education / Experience:	<p>Education required: 4 year apprenticeship program specializing in plumbing.</p> <p>Hours required for position: Approximately 6,000 hours (1,500 hours/year).</p> <p>Tickets that may be required (not limited to): First Aid, WHMIS, Construction Safety Training Systems (CSTS) and Basic Safety Orientation (BSO).</p>
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Labour Provider:	N/A
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Job Overview:	As an Air Conditioning Installer, the worker is required to install air conditioning units onto the site.		
	% of shift	Job Task	Task Description
	6%	Loading materials at shop	<ul style="list-style-type: none"> Retrieving all required materials, tools and equipment at the shop for the site and the shift onto work truck.
	Up to 12%	Driving to site and unloading	<ul style="list-style-type: none"> Driving to the site for the shift in and surrounding areas using work truck. Unloading all required materials, tools and equipment on site.
	1%	Hazard Assessment	<ul style="list-style-type: none"> Reviewing hazards on the site, documenting as required.
2%	Review and preparation for site	<ul style="list-style-type: none"> Reviewing progress and plan for the shift including specific materials required, process for installation, etc. 	

	Approximately 61%	Completing Air Conditioning Installation	<ul style="list-style-type: none"> Installing brackets, air conditioning unit and power to the unit.
	6%	Clean up and loading materials from site	<ul style="list-style-type: none"> Completing site clean up including loading all required materials, tools and equipment from site onto work truck.
	Up to 12%	Driving to shop to unload materials	<ul style="list-style-type: none"> Driving to the shop to unload all materials, tools and equipment with a work truck.

Equipment/ Tools:	<ul style="list-style-type: none"> Shovel (4 lbs.) Measuring tape Brackets (up to 8 lbs.) Refrigerant Air conditioning unit (up to 5 tonnes) Sheet metal pipe Extension Cord Vacuum pump (33 lbs.) Copper pipes (15 lbs.) Drills – right angle, sozo, impact, hammer (up to 29 lbs.) Reciprocal saw (29 lbs.) Circular/skill saw (up to 29 lbs.) Hand tools (up to 16 lbs.) Hammer Acetyline compressed gas (30 lbs.) Nitrogen tank (35 lbs.) 6 foot ladder (19 lbs.) Tool belt (16 lbs.) Milwaukee electrical tool kit (23 lbs.)
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Exposures / Environment:	<ul style="list-style-type: none"> Heat Wind Cold Dust Refrigerant exposure Fire (hot work) Nitrogen (under compression)
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Personal Protective Equipment Required:	<ul style="list-style-type: none"> • Hard hat • Steel toed boots • Gloves • Safety glasses • Safety vest or high visibility stripes • 6 inch sleeves and long pants
Personal Protective Equipment as Required:	

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	
Material Handling:						
Floor to Waist Level Lifting		H	M			Lifting brackets (8 lbs.), various drills (up to 29 lbs.), copper lines (15 lbs.), air conditioning unit (up to 235 lbs. per worker x 2), ladder (19 lbs.), various saws (up to 29 lbs.), acetyline compressed gas (30 lbs.), nitrogen tank (35 lbs.), shovel (4 lbs.), vacuum pump (33 lbs.), various hand tools (16 lbs.), etc. during loading and unloading, throughout the site.



Knee to Waist Level Lifting			M			Lifting brackets (8 lbs.), various drills (up to 29 lbs.), copper lines (15 lbs.), ladder (19 lbs.), various saws (up to 29 lbs.), acetyline compressed gas (30 lbs.), nitrogen tank (35 lbs.), shovel (4 lbs.), vacuum pump (33 lbs.), various hand tools (16 lbs.), etc. throughout the site.
Waist to Waist Level Lifting		H	M			Lifting brackets (8 lbs.), various drills (up to 29 lbs.), copper lines (15 lbs.), air conditioning unit (up to 235 lbs. per worker x 2), various saws (up to 29 lbs.), various hand tools (16 lbs.), etc. throughout the site.
Waist to Chest Level Lifting		H				Lifting air conditioning unit (up to 235 lbs. per worker x 2).
Waist to Shoulder Level Lifting		H				Lifting air conditioning unit (up to 235 lbs. per worker x 2).
Waist to Overhead Level Lifting		M				Lifting ducts (30 lbs.) to install, running the line, lifting panel of air conditioning unit.
Front Carry		H				Carrying evaporating coil, air conditioning unit (up to 235 lbs. per worker x 2).
Right / Left-handed Carry (Dominant Hand)			M			Carrying tool belt (16 lbs.), various power and hand tools (up to 29 lbs.), drills and saws (up to 29 lbs.), ladder (19 lbs.), vacuum pump (33 lbs.), etc. during loading and unloading, throughout the site.
Shoulder Carry		L				Carrying copper pipes (15 lbs.) throughout the site.
Static Pushing/Pulling (Force)		Heavy NOC Level				Pushing copper wire to adjust during installation.
Dynamic Pushing/Pulling (Force)				Heavy NOC Level		Pushing/pulling air conditioning unit onto brackets and out of truck, shovelling, using hand tools (hammer, wrench), pushing copper wire, etc.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Upper Extremity Work:						
Hand Gripping					X	During installation of brackets, while using hand and power tools, lifting and carrying materials/air conditioning unit, loading and unloading on site, site clean up, etc.
Pinch Gripping				X		Pinching copper wire during installation, installing brackets, material set up, etc.

Upper Extremity Coordination					X	During installation of brackets, while using hand and power tools, installing copper wire and brackets, lifting and carrying materials/air conditioning unit, loading and unloading on site, site clean up, etc.
Reaching Forward					X	During installation of brackets, while using hand and power tools, installing copper pipe, electrical cords, lifting and retrieving materials/air conditioning unit from truck, loading and unloading on site, site clean up, etc.
Overhead Shoulder Level Reaching			X			During installation of copper pipes, accessing air conditioning unit panel (while kneeling), attaching wires from air conditioning uni.
Below Shoulder Level Reaching					X	During installation of brackets, while using hand and power tool, lifting and retrieving materials/air conditioning unit from truck, loading and unloading on site, site clean up, etc.
Throwing	X					Not required.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Positional Work:						
Trunk Flexion (Bending)				X		Accessing equipment/tools and materials from site, installation of brackets, shovelling for bracket placement, measuring placement on air conditioning unit, installation of power to unit.
Trunk Rotation (Twisting)			X			Accessing bracket during installation, installation of air conditioning unit (placing onto bracket), installation of power to unit.
Kneeling				X		During installation of bracket, measuring air conditioning unit, installation of power to unit.
Crawling		X				In crawl spaces (dependent on site).
Crouching				X		During installation of bracket, measuring air conditioning unit, installation of power to unit.
Squatting	X					Not required.
Neck Flexion				X		During installation of bracket, air conditioning unit, power to unit, manipulating copper pipes, checking surroundings, loading and unloading on site, hazard assessment.
Neck Extension			X			Installation of power to unit, hazard assessment.



Neck Rotation				X		Installation of copper pipe, power to unit, checking surroundings, loading and unloading on site, hazard assessment.
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Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Static Work:						
Sitting			X			Driving to and from site, during breaks.
Static Standing			X			Installation of brackets, air conditioning units, reviewing site, hazard assessment.
Balancing			X			Ladder climbing, exterior of site.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Ambulation:						
Walking: Level Surfaces			X			Throughout interior of site, on concrete of site exterior.
Walking: Uneven Surfaces			X			Site exterior near air conditioning unit.
Walking: Slopes			X			Site exterior (dependent on site).
Jumping	X					
Running	X					

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Climbing:						
Stairs		X				To access lower levels for interior of site.
Ladder		X				To access ceiling/higher levels for interior of site.
Other			X			Accessing back of Bruins truck.

PHOTOS OF TASKS AND WORK ENVIRONMENT

Figure 1: Completing measurements for bracket installation on exterior of site.



Figure 2: Hammering for bracket installation.

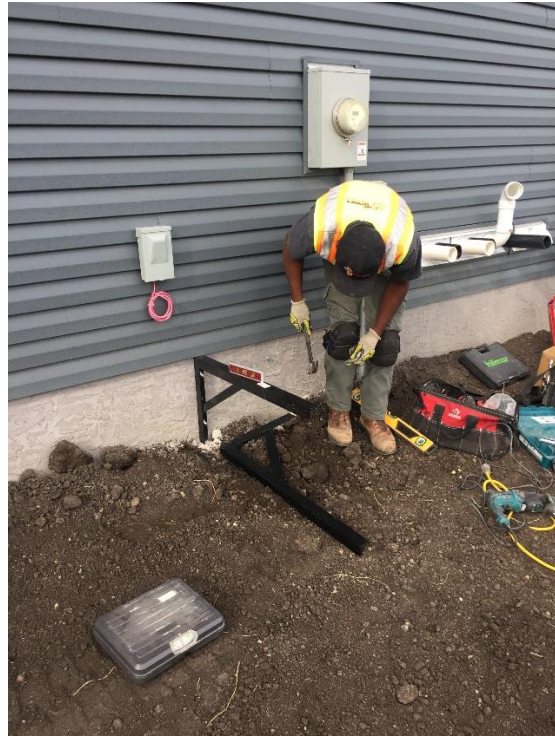


Figure 3: Lifting and carrying air conditioning unit onto bracket for installation.



Figure 4: Installing power to air conditioning unit.



Physical Demands Analysis
Job Title: Air Conditioning Installer
Date Prepared: October 6, 2020
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



SITE SPECIFIC JOB DEMAND ADDITIONS:

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Site Specific Job Demand:						
Vibration			X			Use of power tools.
Writing		X				During hazard assessment.

Validation Agreement

Job Title:	Air Conditioning Installer
Data Collection Date:	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.

Completed by:	Joanna Taets Von Amerongen, BKin	Lifemark Clinician Name
Approved by:	Herman Bruin	Management Representative
Approved by:		Worker Representative
Approved by:		Labour Provider Representative