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Physical Demands Analysis

Roofer – Demolition Phase

Prepared for:
 Alberta Construction Association

Job Title:	Roofer – Demolition Phase	Assessment Location:	Spruce Grove, AB	Data Collection Date:	April 21, 2021
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Completed By:	Joanna Ellingson, BKin	Submitted on:	July 29, 2021
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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</p> <p>Break Schedule: Total of 1 hour break per day / 2-30 minute breaks at 9:00 am and 12:00 pm</p> <p>Shift Rotation: Not applicable</p> <p>On call is required: No</p> <p>Overtime required: Longer shifts may be available depending on work volume and project deadlines</p>
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Education / Experience:	<p>Education required: N/A</p> <p>Hours required for position: N/A</p> <p>Tickets that may be required (not limited to): Fall protection, Construction Safety Training Systems (CSTS) and WHMIS.</p>
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Labour Provider:	N/A
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Job Overview:	As a Roofer completing the demolition phase, the worker is required to complete demolition of the pre-existing roof and complete site cleaning tasks throughout the phase.		
	% of shift	Job Task	Task Description
	1.0%	Toolbox meeting	<ul style="list-style-type: none"> Discuss ongoing and upcoming projects, plans for the day including demolition/installation progress. Discuss safety topics or any safety concerns from the Foreman.
	1.5%	Loading materials/equipment into work truck	<ul style="list-style-type: none"> Retrieving all materials and equipment from the shop and loading the work truck. Materials will be dependent on project and site specifications.

	3.0%	Driving to project site	<ul style="list-style-type: none"> • Site location can vary depending on project timelines and site progress. • In Edmonton and surrounding area.
	1.5%	Unloading materials/equipment from truck to project site	<ul style="list-style-type: none"> • Retrieving all materials and equipment from the work truck and relocating within the site parameters. • Includes lifting and carrying tool bags, various tools, screws, ladders, pylons, fall arrest equipment, etc.
	1.0%	Setting up ladders and anchoring fall arrest equipment	<ul style="list-style-type: none"> • Securing ladders onto building in order for workers to access the roof. • Once ladders are secured, setting fall arrest equipment by anchoring clips and rope onto the roof, ensuring the fall arrest is installed within safety parameters. • Installing safety railings on roof. • Inspecting and putting on fall arrest harness for all workers working on the roof (as needed).
	1.5%	Loading materials/equipment onto roof	<ul style="list-style-type: none"> • Using a manual or mechanical method to transfer materials and equipment onto the roof. • Manual method would include the worker using a rope to secure the load at the ground level and the worker on the roof pulling the rope to move the load onto the roof. • Mechanical method would include using a scissor lift, EWP, hoist etc.
	60%	Demolition phase	<ul style="list-style-type: none"> • Measure area on the roof to be demolished using the roof cutter (if available). • Removing the pre-existing roof membrane, coverboard, insulation, vapour barrier and Q decking by cutting the materials into cubes. Disposing of the previous roof material and using a chute/hoist to remove the garbage. • This is completed using chain saws, utility knives, shovels, spades, roof cutter, etc.
	30.5%	Site cleaning	<ul style="list-style-type: none"> • Cleaning site of excess Q decking, densdeck, insulation, membrane and various garbage/materials from site. • The crew can use a garbage bin on the roof or use the chute on the roof to dispose of materials and garbage. • If hoists are available, this can also be used to transfer garbage from the roof to the site garbage disposal system.
		Start Roof installation for the applicable membrane	Please refer to the Roofing Membrane PDA's for the appropriate physical demands required.

Equipment/Tools:	<ul style="list-style-type: none"> • Chain saws (12 lbs.) • Utility knives (0.5 lbs.) • Shovels (6 lbs.) • Spades (6 lbs.)
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	<ul style="list-style-type: none"> • Roof cutter • Hoist • Power pack blower (22 lbs.) • Drill (2 lbs.) • Tape measure • Ladders (up to 36 ft. – 70 lbs.) • Fall arrest equipment (23 lbs.) • Safety railings • Pylons (12 lbs.)
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Materials:	<ul style="list-style-type: none"> • Pre-existing roofing materials (insulation, vapour barrier, membrane, etc.) – approximately 41 lbs.
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Exposures / Environment:	<ul style="list-style-type: none"> • Outdoor elements (wind, cold, heat, light rain) • Dust (during demolition) • Adhesive fumes
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Basic Personal Protective Equipment Required:	<ul style="list-style-type: none"> • Hard hat • Steel toed boots • Gloves • Safety vest or high visibility stripes • Long sleeves and pants • Fall arrest equipment
Specialized Personal Protective Equipment Required:	N/A

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:p to						
Floor to Waist Level Lifting		H		M		Lifting pre-existing roofing materials (~41 lbs.) and equipment including: ladders (up to 70 lbs. – rare), chainsaws (12 lbs.), powerpack blower (22 lbs.), fall arrest equipment (23 lbs.), tool bag (26 lbs.), various tools, garbage on site, etc. during demolition phase and site cleaning.
Knee to Waist Level Lifting		H		M		Lifting pre-existing roofing materials (~41 lbs.) and equipment including: ladders (up to 70 lbs. – rare), chainsaws (12 lbs.), powerpack blower (22 lbs.), fall arrest equipment (23 lbs.), tool bag (26 lbs.), various tools, garbage on site, etc. during demolition phase and site cleaning.
Waist to Waist Level Lifting		H		M		Lifting pre-existing roofing materials (~41 lbs.) and equipment including: ladders (up to 70 lbs. – rare), chainsaws (12 lbs.), powerpack blower (22 lbs.), fall arrest equipment (23 lbs.), tool bag (26 lbs.), various tools, garbage on site, etc. during demolition phase and site cleaning.
Waist to Chest Level Lifting		H		M		Lifting pre-existing roofing materials (~41 lbs.) and equipment including: ladders (up to 70 lbs. – rare), chainsaws (12 lbs.), powerpack blower (22 lbs.), fall arrest equipment (23 lbs.), tool bag (26 lbs.), various tools, garbage on site, etc. during demolition phase and site cleaning.
Waist to Shoulder Level Lifting		H	L			Transporting pre-existing roofing materials (~41 lbs.) and equipment including: ladders (up to 70 lbs.), fall arrest equipment (23 lbs.), tool bag (26 lbs.), various tools, garbage on site, etc. during demolition phase and site cleaning.
Waist to Overhead Level Lifting		H	L			Transporting pre-existing roofing materials (~41 lbs.) and equipment including: ladders (up to 70 lbs.), fall arrest equipment (23 lbs.), tool bag (26 lbs.), various tools, garbage on site, etc. during demolition phase and site cleaning.
Front Carry			H	L		Carrying pre-existing roofing materials (~41 lbs.) and equipment including: tool bag (26 lbs.), garbage throughout the site and on the roof.

Right / Left-handed Carry (Dominant Hand)		M	L			Carrying pre-existing materials (~41 lbs.) and equipment including: tool bag (26 lbs.), fall arrest equipment (23 lbs.), chainsaw (12 lbs.), spades and shovels (6 lbs.), etc. throughout site and on the roof.
Shoulder Carry		H				Carrying pre-existing materials (~41 lbs.) and equipment including: ladders (up to 70 lbs.), garbage throughout the site and on the roof.
Static Pushing/Pulling (Force)	X					
Dynamic Pushing/Pulling (Force)			H			Pushing/pulling ladder onto work truck (36.0 lbs./52.0 lbs.), operating roof cutter, operating controls on hoist, garbage on site, using spades and shovels on the roof, guiding bin when using hoist, etc.

*Equipment and materials including ladders and roof materials can be carried by 2 workers due to the weight and size of the object being carried.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Upper Extremity Work:						
Hand Gripping					X	Handling pre-existing materials and equipment using hoist/rope method, using roof cutter, chain saw, lifting and carrying pre-existing materials, power pack blower, installing fall arrest equipment, safety railings and ladders, using various tools, removing garbage and site clean up, etc.
Pinch Gripping		X				Retrieving pre-existing screws and smaller items on site.
Upper Extremity Coordination					X	Handling pre-existing materials and equipment using hoist/rope method, using roof cutter, chain saw, lifting and carrying pre-existing materials, power pack blower, installing fall arrest equipment, safety railings and ladders, using various tools, removing garbage and pre-existing screws and smaller items during site clean up, etc.
Reaching Forward					X	Operating the roof cutter, power pack blower, hoist and chain saw, using spades and shovels, retrieving pre-existing materials during demolition phase and site clean up.

Overhead Shoulder Level Reaching		X				Assisting/controlling materials and equipment while using hoist, setting up/securing ladder, pushing ladder onto work truck rack, removing garbage from site as necessary, etc.
Below Shoulder Level Reaching					X	Retrieving pre-existing materials from site and using hoist/chute to remove of materials, installing fall arrest and safety railings, site clean up.
Throwing		X				Dropping excess materials into site garbage bin (if no access to chute).

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Positional Work:						
Trunk Flexion (Bending)				X		During installation of fall arrest equipment and safety railings, guiding hoist, lifting pre-existing roofing materials during demolition.
Trunk Rotation (Twisting)			X			Checking progress of roof demolition, while operating power pack blower, during site clean up.
Kneeling				X		During installation of fall arrest equipment and safety railings, removing pre-existing materials, during site clean up.
Crawling	X					
Crouching	X					Not required.
Squatting		X				During installation of fall arrest equipment and demolition, during site clean up.
Neck Flexion					X	Loading/unloading materials and equipment, during installation of fall arrest equipment and safety railings, demolition of previous roof and site clean up.
Neck Extension			X			Using manual (rope) or mechanical (hoist) method to load/unload materials and equipment on roof (ground position), reviewing site from ground level, loading/unloading materials and equipment onto/from truck, checking surroundings.
Neck Rotation				X		While loading/unloading materials and equipment, during installation of fall arrest equipment and safety railings, demolition of previous roof, operating roof cutter, power pack blower, checking surroundings.

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			During tool box meeting, reviewing site, hazard and fall arrest protection plan.
Balancing					X	While on roof, during demolition and site clean up, climbing ladders to access roof.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Ambulation:						
Walking: Level Surfaces				X		Depending on composition of site (ground and roof).
Walking: Uneven Surfaces				X		Depending on composition of site (ground and roof).
Walking: Slopes			X			Dependent on site (ground and roof).
Jumping	X					Not required.
Running	X					Not required.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Climbing:						
Stairs		X				Gain access to various levels (depending on site).
Ladder			X			To access various levels of the roof/site building.
Other		X				Climbing onto equipment (EWP, scissor lift), scaffolding equipment.

PHOTOS OF TASKS AND WORK ENVIRONMENT

Figure 1: Using shovel to remove pre-existing material from roof during site clean up.



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 Ellingson, BKin
Kinesiologist



SITE SPECIFIC JOB DEMAND ADDITIONS:

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Site Specific Job Demand:						
Roping materials/equipment			X			To load/unload materials onto the roof at site when a hoist is not available.

Validation Agreement

Job Title:	Roofer – Demolition Phase
Data Collection Date:	April 21, 2021

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 Ellingson, BKin Kinesiologist	Lifemark Clinician Name and Credentials
Approved by:		Management Representative
Approved by:		Worker Representative
Approved by:		Labour Provider Representative