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Physical Demands Analysis

CNC Operator – Beam Saw

Prepared for:  
 Alberta Construction Association

<b>Job Title:</b>	CNC Operator – Beam Saw	<b>Assessment Location:</b>	Calgary, AB	<b>Data Collection Date:</b>	November 24, 2020
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<b>Completed By:</b>	Terilyn Miranda, OT	<b>Submitted on:</b>	December 14, 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, 9 hours/day; may vary depending on job availability</p> <p><b>Break Schedule:</b> Total of 1 hour break per day (2 x 15 minute, 1 x 30 minute)</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 depending on project volume</p>
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<b>Education / Experience:</b>	<p><b>Education required:</b> Not Applicable</p> <p><b>Hours required for position:</b> N/A</p> <p><b>Tickets that may be required (not limited to):</b> First Aid, 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 a CNC Operator – Beam Saw the worker is required to review the project plans, and cut the wood/material to the appropriate dimensions with use of the Beam Saw.		
	% of shift	Job Task	Task Description
	5-25%	Reviewing project plans	<ul style="list-style-type: none"> <li>Retrieve project plans; typically, materials for cutting are kept in a queue and the paper plans are placed with the materials</li> <li>Plan which materials will need to be retrieved if not provided</li> <li>If materials previously provided, ensure the materials received are appropriate for the cuts requested</li> <li>Communicate with co-workers as needed to review plans</li> </ul>
25-75%	Completing cuts required for project	<ul style="list-style-type: none"> <li>Turn on/set-up computer for appropriate cuts</li> <li>Lift/carry materials from pallets, carts, or shelving to the saw table</li> </ul>	

			<ul style="list-style-type: none"> <li>• Push/pull materials on table to position for cutting</li> <li>• Remove cut pieces and reposition for additional cuts as needed</li> <li>• Place unused pieces of material in discard bin as needed</li> <li>• Obtain labels printed and place on wood cuts</li> <li>• Carry cut materials on pallet or cart to be retrieved/transport to secondary area to be used by other team members</li> <li>• Place left over materials which are large enough to be reused in off cut area</li> <li>• Communicate with co-workers as needed</li> </ul>
	5-25%	Retrieving panels of material to cut	<ul style="list-style-type: none"> <li>• If cut requires a large panel of material, the worker can use a forklift to retrieve the material from the upper shelving</li> <li>• If material is on the lower level of shelving, a buddy can be employed to handle the material</li> </ul>
	5-10%	Clean work area	<ul style="list-style-type: none"> <li>• Use of air compressor hose to blow dust from saw table, materials and computer</li> <li>• Use of shop vacuum as needed</li> <li>• Discard small off cuts in discard bin</li> <li>• Lean large off cuts against wall in off cut area</li> </ul>

<b>Equipment/Tools:</b>	<ul style="list-style-type: none"> <li>• IMA Schelling Beam Saw</li> <li>• Air compressor hose</li> <li>• Shop Vacuum</li> <li>• Forklift</li> </ul>
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<b>Exposures:</b>	<ul style="list-style-type: none"> <li>• Loud noises</li> <li>• Dust/Wood Shavings</li> <li>• Vibration</li> <li>• May be required to work at varying heights depending on job site</li> <li>• May involve working in small/confined spaces for a duration of time</li> </ul>	
<b>Environment:</b>	Workstation	Variable depending on task – shared workstations and large equipment usage within a large open warehouse
	Indoor/Outdoor	Majority indoors
	Temperatures	Controlled
	Floor Surface	Cement flooring in work area; tile/low pile carpeting in lobby; wooden stairs
	Lighting	Fluorescent overhead
	Noise	Loud environmental noise; various heavy machinery running at one time Hearing protection required with and around tool and heavy equipment use



	Fumes/Odours/Dust	Exposure to wood dust and debris Fumes from paint, stains, cleaners, adhesives and oils present within work areas
	Chemicals	Exposure to paint, stains, cleaners, adhesives and oils throughout work areas
	Vibration	With use of hand tools and heavy equipment

<b>Personal Protective Equipment Required:</b>	<ul style="list-style-type: none"> <li>• Steel toed boots</li> <li>• Long pants</li> <li>• Ear Protection</li> <li>• Eye Protection</li> </ul>
<b>Personal Protective Equipment as Required:</b>	<ul style="list-style-type: none"> <li>• Gloves</li> </ul>

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>						
Floor to Waist Level Lifting		M-H	Lim-L			-Transferring materials from saw table to pallet for transport; or materials from pallet to saw table -Doors are the heaviest materials handled, 36” x 80”, approximately 60 lbs.



<b>Knee to Waist Level Lifting</b>		M-H				-Lifting wood panels from lower storage shelves to saw table (38" tall). -Wood handled is typically 4' x 8' and can be varying thicknesses of MDF (1/4" 33 lbs. to 3/4" 96 lbs.), Plywood (3/4" 67.5 lbs.), Melamine (3/4" 80 lbs.), Particle board, Corian, etc. Buddy lifts available as needed -Materials can reach 3' x 14' or 5' x 12' on a project specific basis.
<b>Waist to Waist Level Lifting</b>		M-H	Lim-L			-Transferring materials from cart (34" tall) to saw table (38") as needed -Transferring wood panels from storage shelves to saw table (33 to 96 lbs.); buddy lifts available as needed
<b>Waist to Chest Level Lifting</b>		M	Lim-L			-Transferring wood panels from storage shelves to saw table (33 to 96 lbs.); buddy lifts available as needed
<b>Waist to Shoulder Level Lifting</b>		M	Lim-L			-Transferring wood panels from storage shelves to saw table (33 to 96 lbs.); buddy lifts available as needed.
<b>Waist to Overhead Level Lifting</b>	X					-None
<b>Front Carry</b>		M-H	Lim			-Carrying wood discard pieces to discard bin -Transferring wood panels from storage shelves to saw table (33 to 96 lbs.); buddy lifts available as needed
<b>Right / Left-handed Carry (Dominant Hand)</b>			Lim			-Carrying wood discard pieces to discard bin
<b>Shoulder Carry</b>	X					-None
<b>Static Pushing/Pulling (Force)</b>		L	Lim			-Sliding wood into position on saw bench for cutting; force required depending on size, and material being maneuvered -Saw bench top is a smooth metal with limited resistance
<b>Dynamic Pushing/Pulling (Force)</b>			Lim-L			-Transporting materials on carts as needed (~5.0 lbs.; force variable with load) -Use of pallet jack to transport larger loads

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Upper Extremity Work:</b>						
<b>Hand Gripping</b>			X			-Maneuvering materials into position on table; transferring materials on/off
<b>Pinch Gripping</b>		X				-Removing small pieces of material as needed



<b>Upper Extremity Coordination</b>		X				-Handling/orienting materials on saw table
<b>Reaching Forward</b>				X		-Adjusting/arranging materials on table -Retrieving materials from storage shelves
<b>Overhead Shoulder Level Reaching</b>			X			-Retrieving labels from label maker -Refilling label maker -Carrying slabs of material (4' x 8' or larger)
<b>Below Shoulder Level Reaching</b>				X		-Adjusting materials on saw tables -Placing/retrieving wood on ground level pallets -Placing labels on materials once cut
<b>Throwing</b>	X					-None

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Positional Work:</b>						
<b>Trunk Flexion (Bending)</b>			X			-Feeding and positioning wood on saw table. -Placing wood on pallet or cart for transport. -Retrieving wood from storage shelves.
<b>Trunk Rotation (Twisting)</b>			X			-Retrieving/returning materials from pallets, carts, and/or storage shelves. -Turning and repositioning materials on saw table.
<b>Kneeling</b>	X					-None
<b>Crawling</b>	X					-None
<b>Crouching</b>		X				-Retrieve or replace items from floor/pallet
<b>Squatting</b>		X				-Retrieve or replace items from floor/pallet
<b>Neck Flexion</b>			X			-Viewing materials on table -Viewing storage shelves to locate materials -Viewing items on pallets/carts -Reading labels/plans at table height
<b>Neck Extension</b>			X			-Viewing computer screen -Viewing upper storage shelves
<b>Neck Rotation</b>			X			-Monitoring materials being cut -Viewing workspace and environment

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Static Work:</b>						
<b>Sitting</b>		X				-On breaks as needed -When operating forklift
<b>Static Standing</b>				X		-Monitoring materials while being cut -Utilizing computer -Anti-fatigue matting on floor by computer



Balancing	X					-None
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Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Ambulation:</b>						
Walking: Level Surfaces			X			-Cement/tiled flooring throughout site
Walking: Uneven Surfaces	X					-None
Walking: Slopes	X					-None
Jumping	X					-None
Running	X					-None

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Climbing:</b>						
Stairs		X				-Access to upper levels of site
Ladder	X					-None
Other	X					-None

Sensory/Perception	Frequency					Details
	N/R	R	O	F	C	
Hear/Conversations				X		-Communicating with team members
Hear/Other			X			-Audible alarms, machinery in use, general awareness of surroundings
Vision/Far			X			-Viewing team members working in surroundings, monitoring machinery/materials being manipulated
Vision/Near					X	-Using machinery and hand tools, maneuvering materials, reading blue prints
Vision/Colour					X	-Viewing appropriate materials -Reviewing blueprints/plans
Vision/Depth					X	-Using machinery and hand tools, maneuvering materials
Perception/Spatial					X	-General awareness of surroundings and machinery in use, maneuvering large materials in space and with machinery use
Feeling					X	-Handling materials and machinery
Speech				X		-Communicating with team members -Following direction in emergency situations

**PHOTOS OF TASKS AND WORK ENVIRONMENT**

**Figure 1: Retrieve 4' x 8' plywood from storage area**



**Figure 2: Carrying material to saw table**



**Figure 3: Adjusting/feeding material into saw**



**Figure 4: Repositioning materials for additional cuts**



**Figure 5: Setting computer for cuts**



**Figure 6: Placing cut materials on pallets**



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,



**Terilyn Miranda, M.Sc.OT, B.H.Sc**  
**Occupational Therapist**





**SITE SPECIFIC JOB DEMAND ADDITIONS:**

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Site Specific Job Demand:</b>						



### Validation Agreement

<b>Job Title:</b>	CNC Operator – Beam Saw
<b>Data Collection Date:</b>	November 27, 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>	Terilyn Miranda, M.Sc.OT, B.H.Sc Occupational Therapist	Lifemark Clinician Name and Designation
<b>Approved by:</b>		Management Representative
<b>Approved by:</b>		Worker Representative
<b>Approved by:</b>		Labour Provider Representative