Hazardous Manual Tasks - Examples of control measures

The nature of the construction industry makes workers exposed to a range of hazardous manual tasks (HMTs) increasing their risk to musculoskeletal disorders (MSDs) / body stressing injuries.

To manage HMTs, PCBUs are required to follow a risk management approach.

For guidance on risk management steps, refer to our HMT – Risk Management page.

IDENTIFY

WHAT IS THE MANUAL TASK?

Using the body to lift, lower, push, pull, carry or otherwise move, hold or restrain any person, animal or thing.

IS THE MANUAL TASK HAZARDOUS?

Application of force:	Posture:	Movement:	Exposure to vibration:
• repetitive • sustained • high • sudden	• sustained • awkward	• repetitive	• hand-arm • whole-body

CONSULT

ASSESS

WHAT IS THE RISK OF MSD*?

How often and how long are specific postures, movements or forces performed or held?

- What is the duration of the task?
- Does the task involve high or sudden force?
- Does the task involve vibration?

WHAT IS THE SOURCE OF RISK?

Work area design and layout repetitive	Systems of work	Nature, size, weight and number of persons, animals or things handled	Work environment

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CONTROL

- Is the task necessary?
- Can the source of risk (work area layout, environment, etc.) be changed?
- Can mechanical aids be used to perform the task?
- What training is needed to support the control measures?

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REVIEW

- When the control measure is no longer effective
- Before a change at the workplace that is likely to give rise to a new or different health and safety risk that the control measure may not effectively control
- If the new hazard or risk is identified
- If the results of consultation indicate that a review is necessary, or
- If a health and safety representative at the workplace requests a review.

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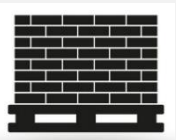
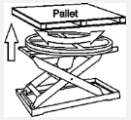
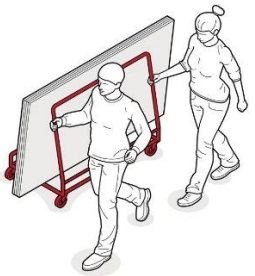
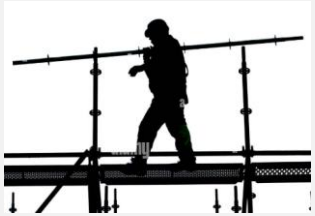
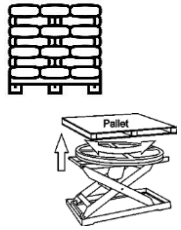
This document provides information on common hazardous manual tasks in construction sites and their associated risk factors and sources of the risk, then examples of control measures.

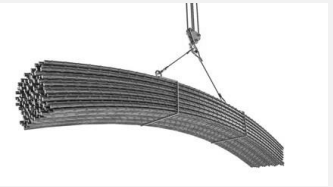
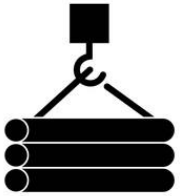
Disclaimer: *This document provides general information only. The examples provided may not be suitable for all sites or circumstances and should not be relied on as the sole means of managing risk. PCBUs remain responsible for identifying hazards, assessing risks, and implementing adequate control measures under their WHS duties.*

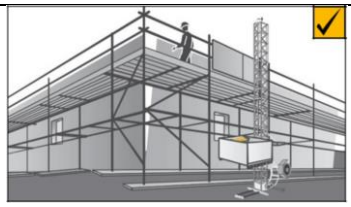
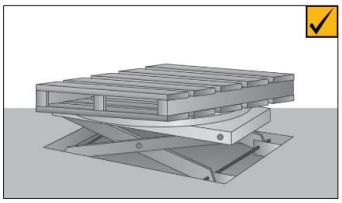
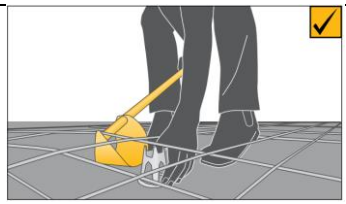
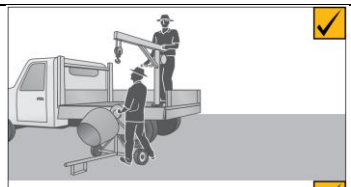
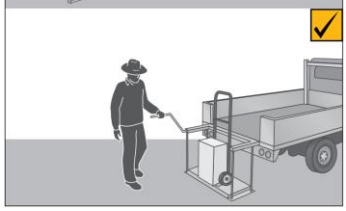
Hazardous Manual Task	Risk Factors	Sources of the Risk	Control Measures	
Lifting and moving concrete blocks or bricks 	High / Repetitive force from lifting heavy loads Awkward or stooped lifting posture	Large concrete blocks, bricks, or stones Working from ground level or low scaffolding height Long carrying distances between material storage and work areas. Working on tight timeframes	Eliminate lifting tasks by using cranes, forklifts, hoists, or telehandlers to move blocks into position. Substitute manual lifting with masonry carts or block trolleys that workers can push. Store materials at waist height (e.g., using block stacks) to minimise bending or over-reaching. Rotate workers to limit the number of lifts per shift. Ensure enough staff working in peak times	
Shovelling (e.g., dirt, gravel) 	High / Repetitive force from digging through hard ground or moving loads Awkward postures while shovelling or twisting the body	Uneven or hard surfaces require extra force to dig Wet, compacted, or dense materials increasing weight Shovelling from ground level or deep trenches Time pressure and working on tight timeframe	Eliminate manual shovelling by using mechanical alternatives such as powered augers, conveyors, or bobcats to move materials. Use long-handled, adequately designed shovels to reduce bending and twisting. Introduce mechanical aids like powered diggers or wheelbarrows to reduce the amount of manual effort Rotate tasks among workers to limit exposure time and allow recovery.	
Painting 	High / Repetitive force from applying paint Awkward postures from reaching overhead	Working overhead / above shoulder height (e.g., ceiling, hard-to-reach areas) Working in tight spaces that requires crouching, kneeling for long periods.	Eliminate manual paining by using spray painting instead of manual brushing where possible. Use trestle ladder scaffold or platforms to reduce the need for ladders and overhead work	

		Poorly designed / poor quality tools (e.g., requires excessive grip or excessive pressure to apply paint)	Use adequate/adjustable tools like roller poles.	
Bricklaying (lifting, carrying) 	High / Repetitive force from lifting and carrying of bricks Awkward postures from bending or twisting when laying bricks	Lifting of heavy breaks and materials Working at low heights or overhead Poor work area layout requiring frequent transport of bricks and materials	Use mechanical aids like brick elevators, hoists, conveyors, masonry carts or block trolleys to transport bricks and materials and reduce manual lifting. Store bricks close to the work area and at waist height to reduce excessive lifting Use adjustable-height workbenches to position bricks within easy reach. Store bricks close to the work area and at waist height to reduce excessive lifting	  
Digging (manual) 	High / Repetitive force digging through hard ground Awkward postures from bending or twisting while digging	Hard ground increases the force needed Inadequate digging tools Muddy, uneven, or sloped surfaces.	Use excavation machinery where possible Use powered digging tools where possible (diggers)	
Pushing/Pulling Carts or Wheelbarrows	High / Repetitive force from pushing or pulling heavy loads Awkward posture during pushing/pulling	Heavy load such as dirt, bricks or mortar Uneven ground or steep inclines create extra resistance	Use motorised or powered carts or wheelbarrows for heavy loads Ensure smooth, flat pathways to reduce resistance when pushing/pulling loads	

		Poorly maintained wheelbarrows or carts	Ensure carts are equipped with smooth, well-maintained wheels	
		Time pressure and working on tight timeframe	Limit the load weight in carts and wheelbarrows to ensure it's manageable	
Using power tools (e.g., drills, saws) 	High/sudden/repetitive force from tool resistance and use	Prolonged use of the tools	Substitute heavy hand tools with mechanised or battery-operated tools to reduce weight.	
	Vibration from tools	Heavy weight of the tools	Introduce job rotation to limit prolonged use of power tools	
	Awkward lifting posture (reaching, twisting)	Working in tight or awkward spaces	Ensure workers have proper grip tools and handle positions to reduce force and strain	
Lifting and handling timber or planks 	Long, bulky, or heavy timber pieces	Transporting large sheets of plywood, beams, or timber	Eliminate manual handling by using crane lifts or forklifts to move timber into place.	
	Difficulty gripping (slippery, rough)	Timber surfaces without proper grips or handles	Using lifting straps or grip aids to improve handling of timber.	
	Lifting at awkward angles or heights	Unstable stacking of timber or beams at height	Substitute with prefabricated timber panels or modular frames that are easier to handle.	
			Administrative control: use team lifting if no other alternatives are not feasible.	
Lifting or carrying sheet materials (e.g., drywall, plywood)	High / Repetitive force from heavy weight and large size	Large sheets of drywall or plywood	Eliminate manual lifting by using forklifts or trolleys for transportation to the work area.	
	Awkward postures (lifting overhead or at angles)	Storing sheets at low or high levels	Engineering control: use sheet material carts with stable platforms to reduce strain.	

		Handling sheet materials with exposed edges	Substitute with smaller, lighter pre-cut materials that are easier to handle. PPE: Wear cut-resistant gloves to prevent injury from sharp edges.	
Carrying and moving scaffold components 	Bulky, heavy, and awkward to handle Risk of falls or trips from unstable footing Prolonged carrying tasks	Scaffold tubes, frames, and boards Poorly stacked scaffold materials Large or long scaffold boards that require carrying over distance	Eliminate manual handling by using cranes or mechanised scaffold lifts to move heavy scaffold components. Engineering control: Stack scaffold components securely at waist height to avoid bending and lifting from ground level. Substitute with pre-assembled scaffold units to reduce the need for manual handling.	
Lifting and moving bags of cement or mortar 	Heavy weight of bags (often 25-50kg) Awkward handling positions (bending, twisting)	Cement or mortar bags with uneven weight distribution Carrying from ground level to mixing stations Repetitive lifting and carrying of bags over long distances	Eliminate the need for lifting by using cement mixers and conveyor systems to move materials. Substitute with smaller bags or pre-mixed materials to reduce lifting strain. Engineering control: Store bags in elevated racks / use pallet lifters to minimise bending during lifting. Administrative control: Rotate workers frequently to reduce strain from repetitive tasks.	
Carrying and transporting heavy rebar or steel reinforcements	Long, heavy, and awkward to carry requires high/repetitive force	Steel bars or rebar used in foundations and concrete work	Eliminate manual lifting by using lifting equipment like cranes or hoists to move heavy rebar.	

		Unsecured or poorly stored rebar Handling long, heavy, and flexible pieces of rebar	Engineering control: Store rebar on racks or stands to allow easy access without excessive bending. Substitute with pre-cut or pre-bent rebar to reduce the need for manual handling of long pieces. Use team lifting if no other alternatives are not feasible.	
Carrying and moving heavy pipes (e.g., steel or pvc) 	High force from lifting heavy weight and bulk Awkward lifting/ twisting angles and distances	Steel, PVC, or copper pipes Storing pipes at ground level or high up in scaffolds Pipes being moved in tight or confined spaces	Eliminate manual carrying by using pipe carriers or rollers to transport pipes across the site. Substitute long pipes with shorter sections that are easier to move. Install pipe racks at waist height to reduce lifting from the ground. Use team lifting if no other alternatives are not feasible.	
Handling and moving flooring materials (e.g., tiles, carpet rolls) 	High/repetitive force from handling heavy and bulky materials Difficulty gripping slippery materials	Large tiles, heavy rolls of carpet or vinyl flooring Working with tiles or materials with rough edges Lifting tiles or carpet rolls without handles	Eliminate manual handling by using trolleys or carts designed for transporting flooring materials. Substitute with pre-cut tiles or modular flooring that require less handling. Use tool-assisted lifting devices (e.g., suction cups for tiles). Provide gloves to protect hands from rough or sharp edges.	

Hazardous Manual Tasks		Example of controls	
Throwing bricks or blocks up		Installing **brick elevator**	
Stacking bricks or blocks above shoulder height.		Installing **ladder hoist**	
Shovelling mortar above shoulder height		Installing **barrow hoist**	
Loading pallets - Working above shoulder height to reach top of a pallet that is too high on a pallet lifter.		Installing the **adjustable scissor-lifter** below floor level to reduce the pallet height	
Lifting reinforcing mesh by hand to place 'bar chairs'		Using a **mesh lifter** to lift the mesh to protect hands, back and arms.	
Loading and unloading vehicles - Workers manually loading and unloading heavy plant, concrete bricks/blocks or heavy items on their own or in a team.	 	Workers using a mechanical lifting device (e.g. **davit arm or tailgate lifters**) to load and unload heavy and unbalanced loads.	 

Images have been obtained from WorkSafe Victoria website.