

WI 31 Revision 4

1 Purpose:

To identify and manage risks to musculoskeletal disorders associated with hazardous manual tasks, in accordance with the WHS Act & Regulations 2012 and the Code Of Practice for Hazardous Manual Tasks (2011).

2 Objective:

- Eliminate or minimise, as far as reasonably practicable, injuries from manual tasks to persons on Bardavcol worksites.
- Comply with statutory and regulatory requirements.

3 Definition:

Hazardous Manual Task (HMT) means a task that requires a person to lift, lower, push, pull, carry or otherwise move, hold or restrain any person, animal or thing that involves one or more of the following:

- Repetitive movement Using the same parts of the body to repeat similar movements over a period of time.
- Repetitive force Using force repeatedly over a period of time to move or support an object .
- Sustained force Occurs when force is applied continuously over a period of time.
- High Force Occurs in any task that a worker describes as physically demanding, a worker needs help to do because of the effort required and/or requires a stronger person or two people to do the task.
- Sudden force Task where force is applied suddenly and with speed resulting in jerky or unexpected movements while handling an item or load.
- Sustained posture Where a part of or the whole body is kept in the same position for a prolonged period.
- Awkward posture Where any part of the body is in an uncomfortable or unnatural position; postures that are unbalanced or asymmetrical or that require extreme joint angles, bending, twisting or reaching.
- Whole body vibration When vibration is transmitted through the whole body usually via a supporting surface, for example, a seat or floor in heavy vehicles or machinery.
- *Hand-arm Vibration* When vibration is transferred through a vibrating tool, steering wheel or machinery controls.

Musculoskeletal Disorder (MSD) means an injury to, or disease of, the musculoskeletal system, whether occurring suddenly or over time, but does not include an injury caused by crushing, entrapment or cutting resulting principally from the mechanical operation of plant.

4 Guidance Notes:

It covers more than lifting heavy weights and affects more than the back. Manual tasks may also involve bending, lowering, reaching or twisting. Injuries often occur due to wear and tear, accumulated from frequent periods of manual handling activity that stress the body, such as repetitive work or heavy lifting. The effects of these injuries often become more disabling as workers become older.

Musco-Skeletal Disorders include:

- sprains and strains of muscles, ligaments and tendons;
- injuries to muscles, ligaments, intervertebral discs and other structures in the back;

- injuries of soft tissues such as nerves, ligaments and tendons in the wrists, arms and shoulders.
- Musculoskeletal disorders occur in two main ways:
- gradual wear and tear caused by frequent or prolonged periods of muscular effort associated with repeated or continuous use of the same body parts, including static positions;
 - sudden damage caused by intense or strenuous activity, or unexpected movements such as when materials being handled move or change position suddenly.

5 Procedure (see flowchart):

- a) Identify hazardous manual task (see definition of Hazardous Manual Task)
- b) Assess the task & associated risk of MSD. Does the task involve any of aspects detailed in the definition of hazardous manual tasks? If yes, then proceed to implementing controls.
- c) Eliminate the risks or apply appropriate controls in accordance with the standard hierarchy of control
 - Engineering solution: The use of cranes, hoists, forklifts, winches, trolleys or other lifting equipment shall be considered first instead of manually manoeuvring heavy loads.
 - Task modification
 - Work-station layout modification
 - Undertaking manual handling with two or more persons
 - Training of personnel in manual handling techniques
 - Rotation of employees in task

When carrying out a risk assessment consider the following risk factors;

- Job demands;
 - Work organisation;
 - Workplace layout;
 - Working position and posture;
 - Repetition of work;
 - Range of movement necessary for tasks, including their frequency and duration;
 - Weight and dimension of loads
 - A load difficult or awkward to handle (e.g. Shape, temperature, instability)
 - Individual lifting capacity - Age, fitness level and other factors related to the personnel required to do the task;
 - Working environment and conditions (heat, noise, cold, vibration, slippery surfaces, air quality, obstructions, weather – if working outdoors);
 - Required PPE e.g. gloves;
 - Equipment and tool design
 - Workstation design
- d) Re-assess residual risk to ensure it is as low as reasonably practicable
 - e) Provide information, instruction & training to Workers involved
 - f) Implement controls
 - g) Review task and controls

6 Controls to assist individual technique with Hazardous Manual Handling tasks

- 1) Never attempt to move an object beyond your capacity. If in doubt, test the objects' weight before attempting to shift it: if it appears too heavy (i.e. not within your comfortable lifting capacity),

awkward, bulky, obtain a mechanical lifting aid (i.e. machine, sack truck, trolley, hoist) and/or somebody to help.

- 2) Different weights suit different people. Avoid moving heavy loads without help. You be the judge and ask for help, and when asked help your workmate. Plan and coordinate the task with the people involved with the move.
- 3) Ensure objects to be moved have sufficient space surrounding them to enable a safe move.
- 4) Avoid reaching out. Do not reach out to pick up any object. Do not over stretch or twist.
- 5) Handle all objects as close to your body as possible.
- 6) Do not perform jerky manoeuvring of objects i.e. a sudden exertion of force.

Performing the lift

- 1) Get a good footing and never try to move anything which you consider too heavy, bulky or awkward.
- 2) Place your feet about shoulder width apart in a comfortable, balanced position, close to the load being moved.
- 3) Bend the knees and grasp the load. Ensure load is balanced.
- 4) Keep back straight – not vertical but straight (the closer to vertical you are when lifting and carrying, the less risk of injury. Maintaining a straight back keeps your spine, back muscles and related organs in the correct alignment. Your back should not be arched or bent and your chin should be tucked in to lock your spine.
- 5) Take a firm hold on the load at designated lifting points with the palms of the hands NOT just the fingers. N.B. Use gloves to protect against any sharp protruding objects. Ensure fingers and toes are clear of item to be placed or when manoeuvring load.
- 6) Manoeuvre object smoothly and gradually by straightening the legs – ensure the strong thigh muscles do the work – not the lower back muscles.
- 7) Do not twist your body when manoeuvring objects. If you have to change direction, turn with both of your feet, not your body. Avoid twisting at your shoulders and/or hips.
- 8) When carrying an object, ensure it is close to your body and watch where you're going. Ensure you can see beyond the object you are carrying (this includes your footing).
- 9) Avoid lifting or holding above shoulder height and repetitive actions. Take breaks and/or rotate tasks.
- 10) Stack or store between waist and shoulder heights as much as possible.
- 11) When lowering the object, maintain a good grip and keep the back straight. Watch out that your fingers don't get caught and pinched by the load.
- 12) Avoid holding or working in a fixed position with the back bent.



Correct way to pick up and transport a load.

Remember, the move that is too heavy or awkward, is the move that injures you!

7 Hazard Notification

All Bardavcol and Sub contractor personnel have the responsibility to report to their direct manager if they believe the task could potentially lead to a MSD. Managers shall take the appropriate action in accordance with this SWI

8 Hazardous Manual Task Case Study - Shovelling

Using the right shovelling technique is one of the most important aspects for the safety of this task. Because the shovelling scenarios, operators and shovels tips are so varied, it is difficult to specify specific methods of shovelling that will suit all people in every situation. A more practical approach is to provide some general guidelines on techniques and then train people to apply these principles in practically orientated training for the work they are performing.

There are a lot of variations in the task, including:

- Shovel type (e.g. trench or short shaft).
- Task (e.g. trench work, cleaning around machinery)
- Operator (varying levels of fitness and training).
- Job demands (e.g. occasional shovel work or very frequent).

Common Hazards Associated with Shovel Work

- Repetitive extended reach forwards - This increases the strain on the lower back.
- Highly repetitive shovelling - Increases accumulated fatigue on the job. Eg.if there is not rotation to different tasks during the shift.
- Overloading the shovel blade - This places excessive leverage and strain on the person. Particularly for longer shafted shovels.
- Poor Shovelling techniques - Eg. Throwing the material behind the operator. This causes excessive twisting and bending of the operator's spine.

Shovelling Checklist

The objective of this checklist is to provide a structure for the development of manual handling and risk control options for shovelling-based tasks.

Step 1: Can the Shovelling Task Be Eliminated

E.g. Is there double handling of the material? Can a machine place/work the material without requiring manual shovelling?

Step 2: Can the Manual Shovelling Be Re-Engineered

If the material has to be moved. Can the process be mechanised? Use a front end loader or a Skid-steer.

Step 3: Select the Right Shovel for the Task

If manual shovelling has to be performed, the correct type of shovel should be used to minimise the risk of injury. There are a range of different shovel designs available (e.g. trench shovel, D handle, long handle, square mouth etc.).

General Shovel Design Features

The following is a guide to evaluate the level of safety for a shovels design.

This information may be used to evaluate the right shovel for the task and assess new shovels prior to purchase.

Flat Blade

Having the blade the same angle as the shaft reduces operator fatigue when digging or breaking up soil of ground height.

Angled Blade

Having the shaft and blade at a 40 – 45 degree angle is better for picking up material from the ground. This is because when the blade is parallel to the ground the shaft is at 45 degrees which requires less bending for the operator to hold the shovel.

Blade Sharpness: The sharper the edge of the blade the less effort will be required by the user to push the blade through materials. Especially soil and finer grain sands.

Shaft Length: Longer shafted handles are better for working at ground height or down benches. The longer shaft means that the operator does not have to bend as much. Having a bend in the shaft also reduces forward bending even more.

Shaft Materials: Many aluminium shafted shovels are lighter and need less physical effort to use the shovel compared to heavier wooden or other metal shafted shovels.

Grip: A softer grip on the shaft of the handle will make it easier to hold, absorb some of the impact on the palm of the hand and reduce heat transmission on hot days.

Handle Shape: A “D” shaped end on the shaft of the handle is used for more power when lifting and turning the shovel.

5 Permits/Licences/Training:

All Bardavcol and subcontractor personnel who are required to perform a hazardous manual task, shall be properly trained/instructed in performing the task. The task shall be documented in a SWMS.

Bardavcol or the subcontractor shall, if hazardous manual handling has been identified:

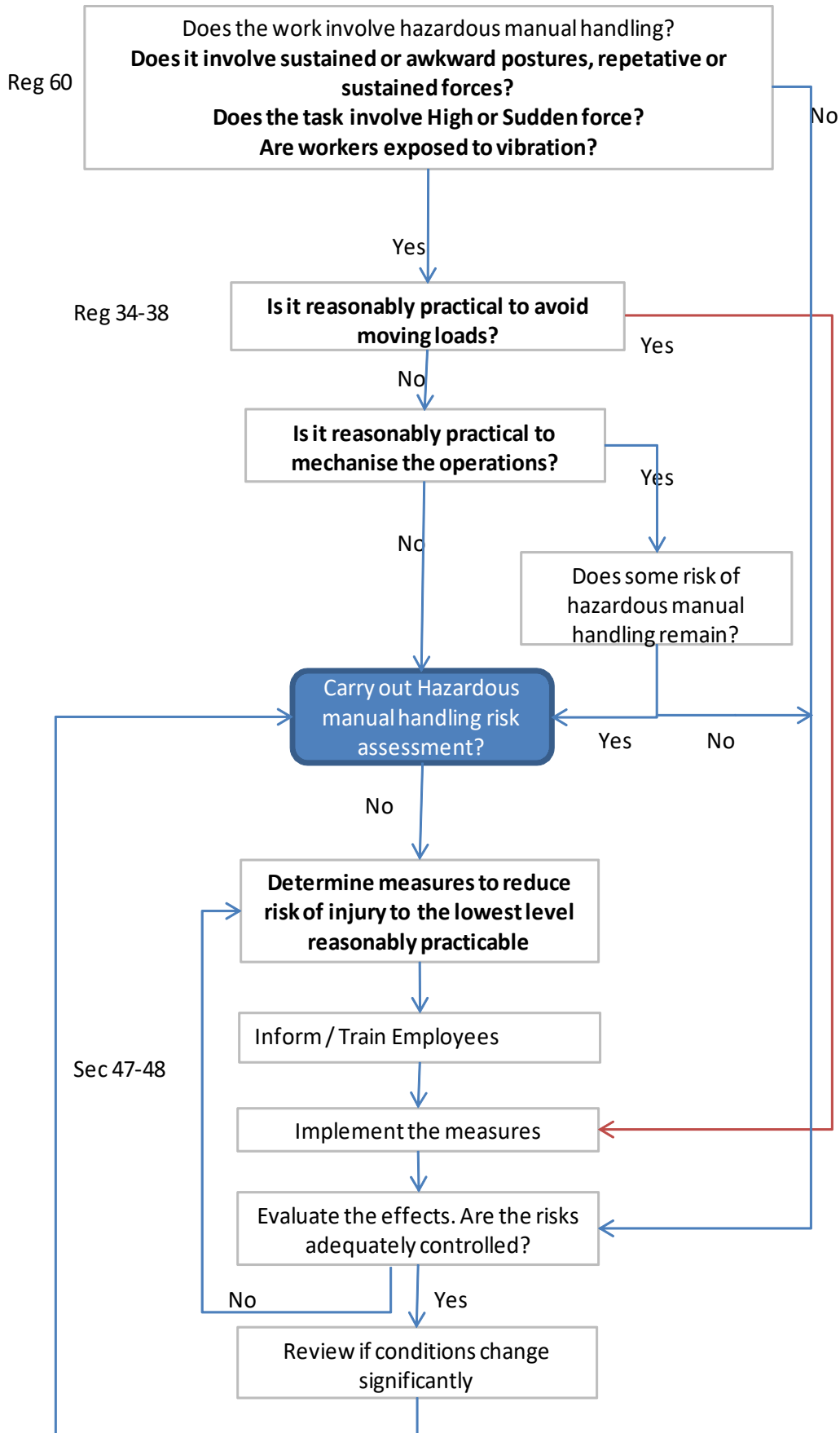
- redesign the manual handling task to eliminate or control the risk factors;
- ensure that all employees involved in manual handling receive appropriate training, including training in safe manual handling techniques.

In addition to the employees involved in manual handling, other target groups also requiring training include:

- supervisors and managers of employees involved in manual handling tasks;
- staff responsible for work organisation, job and task design.

Training Objectives :

- the prevention of musculoskeletal disorders by an approach based on risk identification and assessment, and primary control through job and task design;
- the recognition and promotion of understanding of the multi-faceted nature of hazardous manual handling activities; and
- the promotion and utilisation of safe manual handling techniques



6 Emergency Response:

As per site Emergency Response Plan

7 Program Inspection:

Safety inspections, SWMS review, Internal Audits.

8 References:

Work, Health and Safety Act SA 2012

Work, Health and Safety Regulations SA 2012

Code of Practice – Hazardous Manual Tasks Dec 2011

9 Tools/Forms:

[FO 113 Safety Inspection](#)

FO 111 Induction Register

[FO 37 Safe Work Method Statement Template](#)