
Guidebook for safe manual lifting ergonomics

minimising the demands on the lower back



Introduction

The aim of this guide is to lower the likelihood of improper lifting ergonomics as well as to minimise and/or avoid employee injury.

Research has shown that common injuries in the workplace are musculoskeletal in nature. These injuries are due mainly to poor ergonomics and lower back injuries are a common health problem. Back pain can be caused by different work factors but is more common in occupational roles that involve repetitive tasks such as manual lifting of items.

Employee guidelines regarding correct lifting techniques, are necessary as they play an important role in the prevention of injuries by educating employees. In the removals industry, it is important for the employees to have access to a guidebook which provides advice regarding safe lifting ergonomics. For the employer it is also important, as it leads to better productivity and also promotes workplace safety.

A manual material handling environment can be stressful on the human body. The physical stress and strain often leads to muscle imbalances that eventually result in musculoskeletal disorders. In order to prevent or minimize these injuries, a proactive approach to ergonomics is required.



Factors Contributing to Safe Lifting

General considerations and factors that contribute to safe lifting are as follows:

- **Weights should be kept as constant as possible.** If not possible, weight indicators should be clearly visible on the exterior of the container to be lifted.
- **Lifted loads should be as light as practical.** The lifted load should be held as close as possible to the body in order to minimise the external torque of the load.
- **Good coupling.** Containers being lifted should preferably have handles as this greatly reduces spinal loading, by minimising the vertical distance that the load must be lifted.
- **The lift must be synchronised.** When there is more than one individual lifting an item simultaneously, it is important to co-ordinate the lift via clear communication.
- **Avoid twisting when lifting.** Move the feet or pivot if you need to alter direction as this reduces torsional forces being applied and helps decrease strain.
- **Controlled lifting.** Lifting should occur as slowly and smoothly as possible.
- **Ensure comprehensive stability of the body.** This is achieved with a reasonably wide support base provided by the legs.
- **Micro-breaks** or short resting periods between work related tasks are an effective tool to alleviate discomfort as well as strain associated with prolonged and/or repetitive tasks.



Lifting Technique

The semi-squat also known as freestyle lifting is the most commonly adopted manual lifting technique.



Start in a good posture

When beginning the lift, it is preferable to slightly bend the back, hips and knees as opposed to fully flexing the back (stooping) or fully flexing the hips and knees (squatting). Do not flex the back any further while lifting. Keep the heaviest side of the load next to the body. Keep the head up when handling.



Benefits

Avoids knee and extreme lumbar ranges of motion

Higher maximum accepted weight than for squat and stoop

Less likely to injure lumbar ligaments, intervertebral discs or neural structures

Avoids high compressive forces on the knee

More practical to apply in most occupational environments

Less fatigue of the knee extensors; allowing workers to work over longer periods of time

Applies the best mechanics of squat and stoop and combines them into a more user friendly approach



Mechanical Devices

The use of mechanical lifting devices is recommended as they assist in reducing pressure on the lifter's back, less force is required and easier handling and moving is facilitated. Below are the most common devices in daily use in the moving industry. Devices should always be inspected prior to using and should not be used if defective.

Hand Truck

- designed to move boxes (multiple), tall objects and heavy objects
- weight limit of 250kg
- durable and strong steel construction with wheels
- helps alleviate repetitive task of bending



Moving Dolly

- ideal for moving heavy items
- weight limit 300kg
- constructed from sturdy plywood with non slip coating
- pushing and steering is all that is required



Lifting Straps

- enables full control of arms and hands to stabilise loads
- places weight on shoulders and legs
- adjustable, allowing for broad variety of objects
- for 2 persons

