

201: Health and safety in building services engineering

Handout 4: Manual handling

Learning outcome

The learner will:

- understand the requirements for identifying and dealing with hazards in the work environment.

Assessment criteria

The learner can:

- describe **situations** which can constitute a hazard in the workplace
- explain practices and procedures for addressing **hazards in the workplace** (inferred through practical).

Range

Situations: temporary electrical supplies; trailing leads/cables; slippery or uneven surfaces; presence of dust and fumes; handling and transporting equipment or materials; contaminants and irritants; fire; working at height; hazardous malfunctions of equipment; improper use, maintenance and storage of tools and equipment

Hazards in the workplace: temporary electrical supplies; trailing leads/cables; slippery or uneven surfaces; presence of dust and fumes; handling and transporting equipment or materials; contaminants and irritants; fire; working at height; hazardous malfunctions of equipment; improper use and storage of tools and equipment; bacteria: Weil's disease

Manual handling

Manual handling

All building work involves lifting and manual handling to some extent and millions of working days are lost each year through injuries caused by incorrect lifting. A large percentage of all accidents in the construction industry each year involves injuries sustained while manually lifting and handling materials or equipment.

- Often manual handling and lifting can cause immediate pain and injury; this type of injury is called an **acute** injury.
- Sometimes the result of an injury can take weeks, months or even years to develop; these types of injuries are called **chronic** injuries.

The most common injuries are:

- torn ligaments and tendons
- hernias
- slipped discs
- sprains to muscles and joints.

The Manual Handling Operations Regulations 1992

This is specific legislation that controls manual handling and lifting. These regulations require **employers** to reduce the risks from manual handling by:

- avoiding it if possible
- where it cannot be avoided, automating or mechanising the lifting process as much as possible to reduce risk of injury.

Employers assessing the risk of injury from manual handling must consider:

- load
- working environment
- employee
- task.

The Manual Handling Operations Regulations 1992 also require all **employees** to adopt the safe working practices set by the employer. Here are some points for you to consider before attempting any lifting or handling operation:

- Be aware of your own strength and limitations.
- Decide if it is a one-man operation or whether you require help.
- Always use mechanical equipment or aids, if available.
- Be sure of the weight of the item before lifting.
- Wear gloves to protect your hands.
- Wear safety boots to protect your feet.
- Check that the area is clear and safe to carry out lifting.

Before you attempt any lifting or handling operation, you should select and use appropriate personal protective equipment for handling different materials. Here is a selection of safety clothing and equipment that you may require.

- **Footwear:** safety footwear with reinforced toe caps and soles should always be worn in the workplace.
- **Eye protection:** although extraction systems minimise the risk of flying chips and so on, it is strongly advised that eye protection be provided to operatives at risk.
- **Respirators:** these should be used when moving fine materials, to protect from dust.
- **Safety helmets:** these should be worn when working in compounds or storage areas where materials are stacked, for protection from falling objects.
- **Industrial gloves:** for protection when handling rough materials such as concrete and steel.
- **Protective clothing:** such as a strong pair of overalls or a dust coat.

Handling techniques

In order to avoid injury, the following principles should be followed.

Plan the lift

- Know where the load is going to be placed.
- Plan the route – remove any obstacles and discard any wrapping materials.
- Place the feet correctly: feet apart, giving a balanced and stable base for lifting, with leading leg as far forward as is comfortable.



Lifting

- Crouch down in front of the object with feet apart and one foot alongside the object in front of the other.
- Hold the load as close to your body as possible.
- Keep the back straight at all times – let the leg muscles do the work.
- Push off with rear foot and move off in one smooth movement.



Carrying



- Keep your arms close to the body.
- Take a good hold of the object: grip with the palms and the roots of the fingers.
- Avoid twisting or leaning, as this will strain your back. Turn by moving your feet, not your body.
- Avoid pinching fingers when releasing the object.
- Hold the load so that a clear view ahead is possible.
- Put the load down carefully. If necessary, adjust the position after the load has been put down.

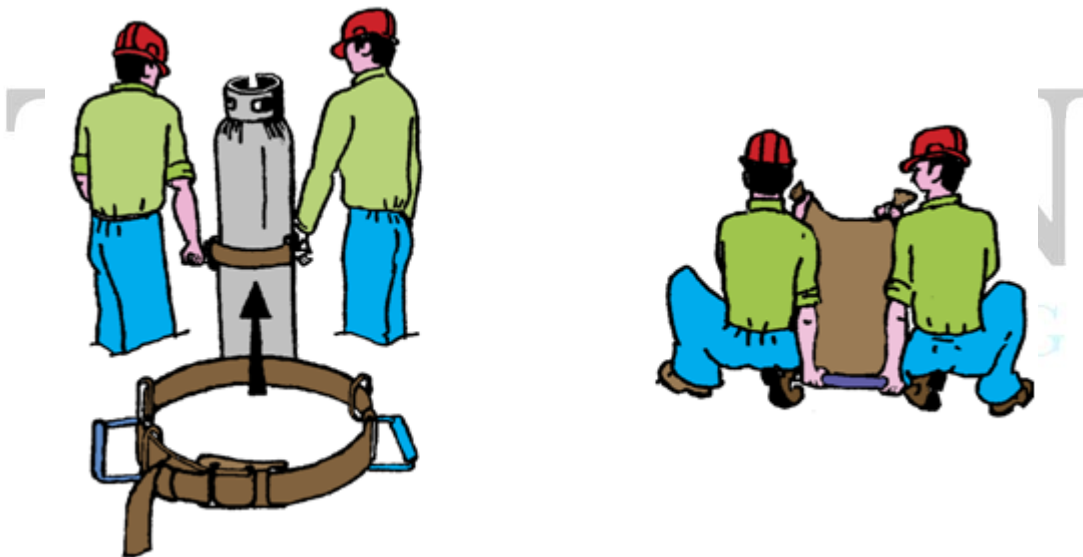


Carrying loads on the back

Keep your back straight by raising the top of the head slightly and by tucking in the chin.

Two-person lift

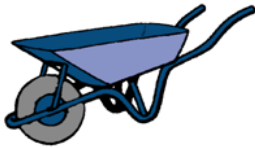
Awkwardly shaped and very heavy objects should be moved or carried only with the help of other workmates. Appoint a team leader and obey their instructions. The same rules should be obeyed and the effort of each person should be the same.



Lifting gear

There are numerous items of small lifting equipment available to assist with handling materials on site and in the workshop. These range from the small brick lifts, slings, barrows and dumpers through to mechanical forklift trucks. Only use this equipment if you are qualified to do so.

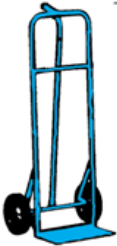
Many materials are delivered to the site on lorries equipped with mechanical off-loaders. Once offloaded, it is the builder's responsibility to move the materials to a secure place until required for use.



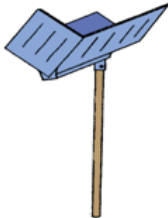
Barrows are the most common form of equipment for moving materials on site.



A **pallet truck** can be used on hard areas for moving heavy loads.



A **sack truck** can be used for moving bagged materials and paving slabs.



A **hod** can be used for moving bricks on to higher levels, such as scaffolds.

Rollers used to move heavy loads

Heavy loads that are impossible to move by lifting can sometimes be moved on rollers; short scaffold poles are ideal for this purpose.

- When heavy items are delivered to the site, they should be unloaded on to timber bearers to allow them to be moved easily when required.
- In order to move them at a later date, the front end should be lifted up and a steel tube placed under. The rear end is then lifted and another steel tube placed under the load.
- The load is then gently pushed forward by your helpers. As the object moves forward, another roller should be ready to place under the front end of the load and the one freed at the rear should then be brought to the front.
- The steel tubes can be slanted slightly to alter the direction of travel.
- This sequence should continue until the load is where it is required.

