

Working at Height

Level 3 Health and Safety in the Workplace

Introduction

If your business requires any sort of work at height, whether it's using ladders, scaffolding or cherry pickers, then it's important to understand what can be done to reduce the risk of falls.

Falls from height are one of the most common causes of injury in construction and account for many fatalities amongst building workers.

This section outlines some of the different types of equipment for working at height and explains how employers can help to reduce the risks associated with them.

Topics to be Covered

The topics covered in this section are:

- The risks of working at height
- Legislation
- Employer and employee duties
- The hierarchy of control measures
- Risk reduction
- Types of equipment
- Fragile surfaces
- Vehicles
- Training, communication and housekeeping
- Emergency procedures

The Risks of Working at Height

Falls are the single biggest cause of workplace deaths and are one of the main causes of major injuries. This doesn't always mean falling from roofs or towering scaffolding: many serious, and even fatal, workplace injuries are caused by falls from below head height.

The latest UK statistics show that each year there are around 35 fatalities, 4,650 major injuries and a further 7,065 minor injuries where the person needed to be off work for over three days.

The tasks where falls from height are most common include:

- Gutter cleaning.
- Putting up displays.
- Minor roof work.
- Shelf stacking.
- Window cleaning.
- Unloading a vehicle.
- Machine maintenance

Legislation

The main legislation for working at height is the Work at Height Regulations 2005, which cover a wide range of activities. Some of the work at height activities represented by the regulations include:

- Using a ladder or stepladder.
- Working on a flat scaffold or mobile elevated platform.
- Working on the back of a lorry.
- Working in areas where someone can fall from an edge, through an opening or through a fragile surface.
- Working at ground level close to an opening, hole in the ground or an excavation that someone could fall into.

Employer Duties

To minimise the risk of danger when working at height, every employer is required to ensure that any work at height is properly planned and organised, and that everyone is trained and competent.

Employers should also:

- Assess any potential risks, including ensuring that the place where work is done is safe.
- If necessary, select appropriate work equipment and ensure it is used correctly and properly inspected and maintained.
- Ensure that no person at work passes across, near or works on, from or near, a fragile surface.
- Implement control measures to prevent any material or object from falling from height, where it is liable to cause injury to anyone below.

The regulations state that employees must:

- When working under the control of another person, report to that person any activity or defect relating to work at height which is likely to endanger the safety of themselves or another person.
- Use any work equipment or safety device provided for work at height by the employer.
- Adhere to any training in the use of the work equipment or device concerned.
- Take care to ensure that their activities do not put others at risk.

The Hierarchy of Control Measures

The Work at Height Regulations set out a simple hierarchy for managing working at height.

The hierarchy states that duty holders must:

1. Avoid work at height where they can.
2. Where work at height cannot be avoided, use work equipment or other measures to eliminate the hazards or reduce the distance and consequences of a fall should one occur.
3. Provide additional training and instruction, or take other additional suitable and sufficient measures to prevent, so far as is reasonably practicable, any person falling a distance liable to cause personal injury.

In the first instance, employers must always try to avoid the need, where reasonably practicable, for working at height. For example, long-handled tools can be used to safely carry out a task from ground level, such as cleaning windows.

It may also be possible to design out the need to work at height. For example, installing a light fitting that is designed to be lowered when changing the bulb.

If you have staff who are required to work at height, it is essential to carry out a risk assessment prior to them commencing work. Factors to be considered in the risk assessment include:

4. The work activity, including the tasks and the order in which they are to be carried out.
5. The equipment to be used.
6. The duration of the work.
7. The location where the work activity is to take place, including the presence of hazards such as overhead power lines and open excavations.
8. The working environment, including the weather conditions and lighting.
9. The condition and stability of existing work surfaces.
10. The physical capabilities of the workers.

Risk Reduction

If it is not possible to avoid working at height, then measures should be taken to ensure that the risks are reduced.

For example, where working at height is required, is it possible to use an existing safe place that prevents people falling, such as a flat roof with permanent guard rails?

Where it is not reasonably practicable to work from an existing safe place of work, employers must choose the most suitable work equipment to prevent people from falling.

This may include tower scaffolds, podium steps and mobile elevating work platforms (MEWP), which all have guard rails.

If the risk of a fall cannot be eliminated, then the use of measures to minimise the distances or consequences of a fall should one occur are essential.

Measures could include:

- Airbags located as close as possible to the working area. Note that they do not work as effectively if the fall distance is too great.
- Safety nets with adequate clearance under the nets to prevent injury to those falling into them.
- Fall arrest harnesses with clearance from the ground to allow a shock absorbing lanyard or inertia reel to deploy.

When selecting the most suitable work equipment to use, be sure to consider:

- The working environment, including ground conditions, slopes, obstructions or other people working in the same area.
- Space constraints, as each platform requires a minimum amount of space. For example, MEWP need outriggers.
- Adequate clearance for the equipment. For example, overhead power lines can be a risk when erecting scaffolding.
- Duration and frequency of use. A longer duration generally justifies a better standard of fall protection, for example, a tower scaffold rather than a ladder.
- The distance and consequences of any potential fall. Can the potential to cause injury be mitigated? For example, by using netting or harnesses.
- The number of people working at height and who will require protection.

Also consider:

- The type of work to be carried out and whether it requires heavy loads on the platform.
- The dimensions of the work equipment to ensure a safe working area and safe passage.
- The effects of adverse weather conditions.
- Any additional risks posed by the installation, use and dismantling of the work equipment.

Employers should choose collective protection before personal protection measures. Collective protection is equipment that will protect more than one person and does not require any action by those using it to ensure it will work. Examples include scaffolds, cherry pickers, nets and airbags.

Exercise

What is the first step in the hierarchy of control measures?

- To use work equipment to reduce the hazards
- To provide employees with additional training
- To avoid the need for working at height**

Types of Equipment

The following slides cover some of the risks and control measures associated with specific types of work at height equipment.

Tower scaffolds

Always follow the manufacturer's instructions for erecting, dismantling and inspecting a tower scaffold. One of the two HSE and industry approved methods for assembling and dismantling towers must be used: 3T or an advance guard rail system.

The tower must rest on firm level ground with the locked castors or base plate properly supported. Never use bricks or building blocks to take the weight of the tower.

Install stabilisers or outriggers when advised to do so in the instruction manual, and never erect a tower to a height above that recommended by the manufacturer.

Always provide a safe way to get to and from the work platform and provide edge protection on all working platforms used for storing materials.

Mobile elevating work platforms (MEWP)

This equipment has its own dangers and risks so must be adequately assessed and have the proper precautions taken.

Before using mobile elevating work platforms, think about:

- Height: how high is the job from the ground?
- Application: do you have the appropriate MEWP for the job?
- Conditions: assess ground conditions and consider the risk of the MEWP becoming unstable or overturning.
- Operators: are they trained and competent?
- Obstructions: could the MEWP be caught on any protruding features, such as steel-work, tree branches or power lines? If there is passing traffic, do you need to take actions to prevent collisions?
- Restraints: do you need to use harnesses?
- Checks: has the MEWP been examined, inspected and maintained as required by the manufacturer's instructions? Have daily checks been carried out?

Ladders and stepladders

Ladders should only be used when the risk assessment shows that the use of other, safer work equipment is not justified or feasible.

Generally, a ladder or stepladder should only be used for work for up to 30 minutes in one position, and for work that involves lifting no more than 10 kg up the ladder.

Leaning ladders must be prevented from slipping or moving by securing the stiles at a suitable point, such as near the top or bottom of the ladder. Where this is not possible, an effective ladder stability device should be used. As a last resort, the ladder should be footed.

Stepladder users should always ensure the steps face the work activity so as to avoid overturning.

When using ladders or stepladders:

- Always rest the ladder on a firm, level surface and a clean, non-slip floor.
- Never rest a ladder on movable objects, like pallets or bricks.
- When climbing or working from a ladder, maintain three points of contact at all times, i.e. both feet and one hand.
- Ensure the ladder or stepladder rungs or steps are level.
- Do not exceed the stated load of the ladder.
- Do not over reach. Keep your belt buckle inside the stiles and both feet on the rung throughout the task.
- The top three rungs of a leaning ladder provide a handhold so never work off them.
- Use tool belts to avoid holding items when climbing.

You should also:

- Always have one hand free to grip the ladder if something has to be carried.
- To help prevent a leaning ladder from slipping, it should be positioned at an angle of 75 degrees, i.e. one unit out for every four units up.
- Make sure the top of a leaning ladder rests against a solid surface. For example, a wall and not plastic guttering.
- Ensure a stepladder is fully open and any locking devices are fully engaged before using.
- Ensure the weather is suitable and do not use a ladder in strong or gusty winds.
- All ladders and stepladders should have a pre-use check every day, focusing on the condition of feet, stiles and rungs.

Fragile Surfaces

A fragile surface is one that is liable to break if a person worked on it or fell onto it. Any fragile surface in or near the work area increases the risk of injury.

Examples include fibre and asbestos, cement roof sheets and many types of skylight.

Employers should avoid the need to work on or near fragile surfaces, for example, by repairing a skylight from above using a cherry picker.

If this is not possible, the risk should be removed by using fixed walkways with guard rails to get across a fragile roof or by using suitable working platforms.

Vehicles

It's estimated by the HSE that over 75% of major falls from vehicles occur during loading and unloading activities.

When assessing and planning vehicle tasks, employers should follow these control measures:

- Plan to avoid work at height wherever possible, such as positioning plant controls at ground level to avoid the need to climb.
- Where working at height cannot be avoided, select work equipment to prevent falls.
- Give priority to equipment that protects everyone at risk, such as vehicle platforms with slip-resistant surfaces or handrails.
- Where this is impracticable, equipment that protects the individual should be used, such as harnesses and lanyards.
- Where the risk of a fall cannot be eliminated, use equipment to minimise the distance and consequences of a fall, such as a net.

Training, Communication and Housekeeping

It is possible to manage the risk of falls through training, team briefings and instructions, such as manufacturers' manuals.

Employers have a legal responsibility to ensure that their employees are sufficiently trained in their jobs, health and safety, and how to use any equipment provided to them.

Regular inspection of equipment, a system for reporting faults, and ensuring faults are repaired quickly are also essential to make sure that risks are managed.

Be sure to keep vehicle beds and catwalks tidy, provide suitable washing facilities and provide suitable personal protective equipment for staff where required.

Emergency Procedures

When planning work at height, it is essential that employers consider emergency or rescue procedures in case an accident does happen. For example, if access equipment becomes stuck or if a person falls while wearing a safety harness.

Make sure that there are suitable arrangements in place to deal with and look after anyone involved in an accident and ensure that those involved in the rescue are fully trained and competent.

The HSE states that it is essential that there is a specific rescue plan and adequate resources in place for each area where work at height is carried out. This should be regularly assessed and updated where necessary.

Rescue equipment should always be present at the worksite and should be sufficient to carry out a rescue of an individual from any situation. Employers should not rely on the emergency services to carry out work at height rescues.

Exercise

Are the following statements about ladders true or false?

A ladder or stepladder should only be used for work for up to 30 minutes	<input checked="" type="radio"/> True	<input type="radio"/> False
The steps of a stepladder should always face away from the work activity	<input type="radio"/> True	<input checked="" type="radio"/> False
Always rest the ladder on movable objects, like pallets or bricks	<input type="radio"/> True	<input checked="" type="radio"/> False
The top three rungs of a leaning ladder should only be used as handholds	<input checked="" type="radio"/> True	<input type="radio"/> False
Ensure a stepladder is fully open and any locking devices are fully engaged before using	<input checked="" type="radio"/> True	<input type="radio"/> False

Summary

In this module, you've learnt what is required under the Work at Height Regulations 2005 in order to minimise the dangers of working at height. Under the regulations, and if working at height cannot be avoided, employers must ensure that workers are correctly trained, the work activity is properly planned, and that suitable fall prevention methods are used.

A risk assessment of the work activity, plus any equipment that is to be used, is essential. All equipment intended for work at height, including tower scaffolds, MEWP and ladders, must be suitable for the task, secure and used properly by employees.

Where possible, employers should eliminate the need for working at height and on fragile surfaces. If this isn't possible, then the risks must be removed with appropriate control measures as identified by the risk assessment.