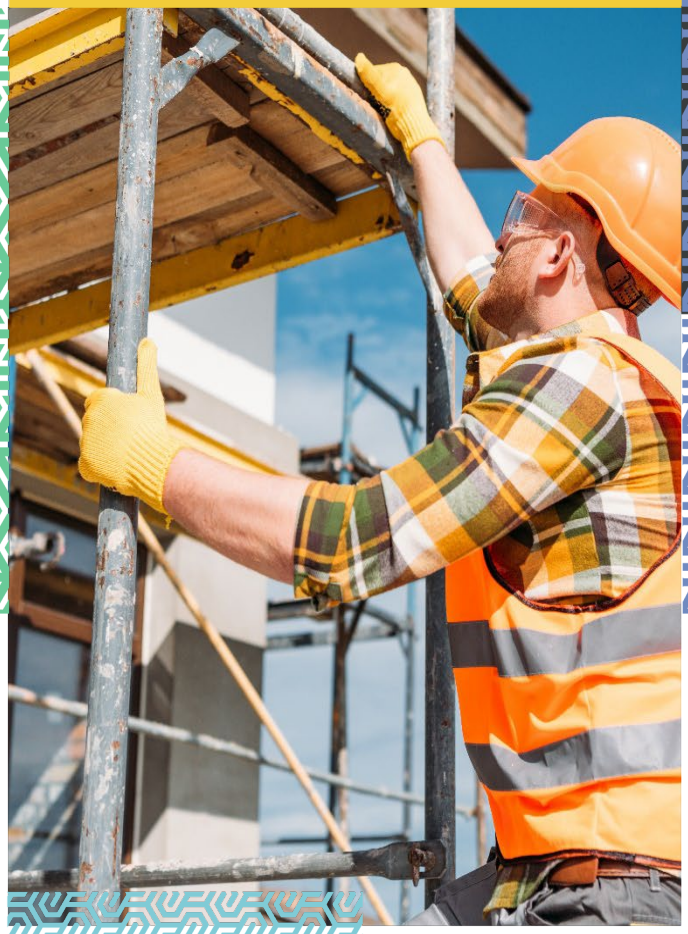
Risk control

Working at Height Toolkit: Introduction



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Introduction

The Health and Safety Executive has worked for over two decades to reduce the number of fatalities and life changing injuries caused by falls from a height. The purpose of the Work at Height Regulations 2005 is to prevent death and injury caused by a fall from height.

It is important to reflect that a person may be injured by typically falling from a piece of equipment, such as a ladder; falling from an unprotected edge such as the side of an excavation; or falling through a surface which cannot support their weight. An associated hazard for others nearby is being struck by a falling object which is often equipment or materials being used at height.

In order to manage this risk the employer has to consider four aspects to identify the situations where this may occur:

- The task being undertaken
- The equipment or materials involved
- The environment
- The competence of the person doing the work

'Work at height' means[1] 'work in any place where, if there were no precautions in place, a person could fall a distance liable to cause personal injury'.

For example a person is working at height if they:

- are working on a ladder or a flat roof
- could fall through a fragile surface
- could fall into an opening in a floor or a hole in the ground

Assessment of Risk

First assess the risks, considering the:

- Height of the task
- Duration and frequency
- Condition of the surface being worked on

The employer then needs to consider before working at height proceeds:

- **Avoid** work at height where it's reasonably practicable to do so
- Where work at height cannot be easily avoided, **prevent** falls using either an existing place of work that is already safe or the right type of equipment
- **Where the risk cannot be eliminated, minimise** the distance and consequences of a fall by using the right type of equipment

For each step, it is important to consider measures that protect everyone at risk, known as collective protection, before measures that only protect the individual referred to as personal protection.

Collective Protection

When planning work at height, preference should always be given to using collective protection measures over those that offer only personal protection.

Many of the means of offering collective protection against falls from height also offer a means of access. These include:

- Fixed and mobile scaffolds
- Podium steps
- Mobile Elevating Work Platforms (MEWPS)
- Barriers
- Walkways

Scaffolding should always be constructed and modified by qualified persons, usually those holding CISRS qualifications (for fixed scaffolding) or PASMA qualifications (for mobile aluminium towers).

Scaffolding is commonly used for access around the world, and this is because whilst it provides collective protection against falls, it also provides a safe working platform for those working at height.

In the UK, scaffolding that forms a working platform must be inspected by a competent person upon completion, every seven days thereafter and after any event that might compromise its stability or safety.

Personal protective measures rely upon the use of personal fall protection equipment (PFPE) and they only protect the user. The most common example of PFPE is safety harnesses. It is important to note that only the individual user is protected by PFPE and that a high level of personal discipline is required to ensure the equipment is worn and used correctly.

Types of PFPE

Broadly, there are four different varieties of PFPE. These are:

- Fall restraint systems
- Rope access systems
- Work positioning systems
- Fall arrest systems

Regardless of whether collective or personal protection is chosen, all work at height requires those carrying it out to be competent and therefore adequate training supervision and instruction is essential. The training should include emergency situations and what needs to be done if someone needs rescuing from height, whether that be someone whose fall has been arrested, or someone who suffers a medical emergency at height.

It is a legal requirement to inspect equipment used for work at height and while the specifics of the inspection regime may vary depending on the type of equipment being used, all equipment should be inspected at the specified intervals to ensure it remains in a condition that is fit for purpose.

There are many different varieties of Personal Fall Protection Equipment (PFPE) that is designed to suit many different working at height scenarios. Selection of the right equipment is essential, and this can often be achieved by engaging with those who will actually carry out the work. Provision of the wrong type of PFPE can potentially have fatal consequences and therefore considerable effort should be put into establishing that the correct equipment is specified and used, and that those using it are adequately trained.

The principle of preventing falls should always be preferred to arresting falls, and therefore work restraint equipment should be used where possible. Equipment of this nature physically prevents the user from placing themselves in a position where they could become exposed to a fall from height.

Most typically, this equipment includes ‘mansafe’ restraint systems used in roof work and they involve the user wearing a harness to which a fixed-length lanyard is attached, which prevents the encroachment into danger areas.

Some working at height requires the use of work positioning systems. These are primarily seen in the telecoms sector, and are used by engineers who are required to work with their hands free, in supported or partly supported positions, that would without such equipment be deemed unsafe.

Work positioning systems require the use of a back-up fall protection system, to ensure user safety in the event that the primary system fails.

Some work at height tasks lend themselves to being carried out by specialist rope access technicians, where ropes and specialist equipment is used to gain access to the work location and allow the user to remain suspended there. Rope access requires a high level of competence and should only ever be practiced by specialists who have received all of the right training and equipment.

Fall arrest harnesses are perhaps the most commonly used form of PFPE, and they are most commonly used by scaffolders and others in the construction industry. Technological advancements mean that modern fall arrest systems allow a limited degree of user movement and therefore they are often viewed as being a practical option.

Fall arrest harnesses rely on the identification and use of a secure anchor point and although they permit a fall to occur, they mitigate the consequences of any falls through a shock absorbing lanyard that connects the user to the anchor point and reduces the impact of the fall when they are activated. In the event of an arrested fall, it is likely that the user will be suspended by his fall arrest equipment and therefore it is essential that a rescue plan is in place before the work commences.

Ladders

Ladders can often provide a quick solution for some working at height tasks, however, their use must always be justified by risk assessment and they should only ever be used for lightweight tasks that can be performed with one hand, so that one hand remains free for the worker. If this is not possible, or it cannot be justified by a risk assessment, then the likelihood is that another form of access should be used.

Podium steps can provide a lightweight and convenient means of gaining low-level access to height. They are often viewed as being a safer alternative than ladders, because they are often mobile, they provide fall protection on all four sides and they free up both hands for users and they provide a lower risk alternative than ladders.

Roof Edges and Openings

Falls from roof edges occur on both commercial and domestic projects and on new build and refurbishment jobs. Many deaths occur each year involving smaller builders working on the roof of domestic dwellings

Sloping roofs: sloping roofs require scaffolding to prevent people or materials falling from the edge. Edge protection should be fitted to the eaves of any roof and on terraced properties to the rear as well as the front. Where work is of short duration (tasks measured in minutes), properly secured ladders to access the roof and proper roof ladders may be used.

Flat roofs: falls from flat roof edges can be prevented by simple edge protection arrangements – a secure double guardrail and toe-boards around the edge.

Fragile Surfaces

Fragile roofs are a huge problem in the UK, and every year, they account for a fifth of all fatal workplace accidents in the UK as a result of people falling through them, with many suffering from permanent disability.

Those carrying out small, short-term maintenance and cleaning jobs are over-represented in the injury statistics.

Everyone involved in this type of work, including clients, designers and contractors, should treat falls through fragile surfaces as a priority hazard.

Fragile surfaces[2] and materials will not safely support the weight of a person and any materials they may be carrying.

All roofs, once fixed, should be treated as fragile until a competent person has confirmed that they are non-fragile. In particular, the following are likely to be fragile:

- **Fibre-cement sheets** – non-reinforced sheets irrespective of profile type
- **Rooflights** – particularly those in the roof plane that can be difficult to see in certain light conditions or when hidden by paint
- **Liner panels** – on built-up sheeted roofs
- **Metal sheets** – where corroded
- **Glass** – including wired glass
- **Chipboard** – or similar material where rotted
- **Others** – including wood wool slabs, slates and tiles

Fragile roofs are most prevalent in factories, warehouse and farm buildings and in some older domestic properties. They take various forms, with the most common being:

- Roof lights
- Liner panels on built-up sheeted roof
- Non-reinforced fibre cement sheets
- Corroded metal sheets
- Glass (including wired glass)
- Rotted chipboard
- Slates and tiles

Falls from or through fragile roofs are relatively easy to prevent and this can be achieved by implementing a series of basic control measures that prohibit access until a safe system of work has been implemented. Typically, this might include providing a proper means of stair or ladder access, limiting the work area on the roof by using barriers and the use of a proprietary lightweight decking system that spans the purlins and provides a safe work area for those who require access.

All work at height must be planned, managed and carried out by competent people, who have a good knowledge of the risks of working at height, and the task to be undertaken. For this reason, training is essential at every stage of the working at height process.

Falls from Height

Sectors with situations where a fall from height can occur include:

Motor vehicle repair[3]

Falls from height are the cause of nearly 10% of injuries in Motor Vehicle Repair[5]. The main cause is falling from ladders. Situations where the risk is significant include:

- Workplace maintenance, cleaning, and repair at height
- Raised storage areas e.g. top of offices, mezzanine floors
- Tops of commercial vehicles and trailer units under repair
- Vehicle Inspection pits or rolling roads.

Construction[4]

Falls from height are the cause of nearly 58% of fatalities[5] in Construction. The main cause is falling from ladders. Situations where the risk is significant include:

- Working near the edge of excavations[6]
- Working from ladders, scaffolds and working platforms
- Working too close to unprotected roof edges
- Roofs made with fragile materials or obscured roof lights

Food and Drink: Handling Deliveries[7]

Falls from height are the cause of nearly 20% of fatalities in the food and drink sector[5]. Situations where the risk is significant include:

- Working from ladders
- The back of lorries
- Working on the top of a vehicle
- Falls from the forks of Fork Lift Truck

These type of activities often occur in large, multi-site organisations. A careful look at what activities can involve working at height in your organisation will show you the potential for these situations in your workplace.

Fragile Materials

Those planning work at height should also consider the required steps for preventing materials falling from height, and this extends to the tools being used by those carrying out the work. Tool tethering is now common during work at height activities, and involves the tools being used being secured to an anchor point to prevent them from falling if they are dropped.

Remember, taking the time to plan and organise work at height will ensure that the correct training, equipment and processes are used, and doing so can have a huge impact on preventing falls from height and the costs that are associated with them.

Managing the Risk

Organisations needs to keep asking themselves these six questions whenever a task requires working where a person can fall a distance causing injury:

- Can the work at height activity be avoided?
- If not are there any existing means of access to the work area?
- Can collective protection be used as a means of carrying out the work?
- Can falls be prevented by Personal Fall Protection equipment (PFPE)?
- Can collective protective equipment be used to mitigate the distance and consequences of any potential falls?
- Is a work at height permit required to tightly control this activity?

An essential element in defending prosecutions and claims is demonstrating that the statutory obligations placed on your organisation have been met. Actively managing the risk of working at height is an important aspect of being prepared to demonstrate that your health and safety management is robust.

References

1. https://www.hse.gov.uk/work-at-height/introduction.htm
2. Construction - Fragile surfaces industry health & safety (hse.gov.uk)
3. Falls from height in motor vehicle repair (MVR) (hse.gov.uk)
4. https://www.hse.gov.uk/construction/safetytopics/roofwork.htm
5. Statistics - Work-related fatal injuries in Great Britain (hse.gov.uk)
6. Excavations - Construction Safety topics - HSE
7. https://www.hse.gov.uk/food/falls.htm

Risk Management Partners and Gallagher Bassett would like to thank QBE European Operations for the material used to shape this toolkit segment.

Further information

For access to further RMP Resources you may find helpful in reducing your organisation's cost of risk, please access the RMP Resources or RMP Articles pages on our website. To join the debate follow us on our LinkedIn page.

Get in touch

For more information, please contact your broker, RMP risk control consultant or account director.

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