



Working safely at height

How to avoid personal injury & financial loss when completing tasks that require leaving the ground

by Andrew Wilkinson, Milling and Grain magazine

According to the latest Health and Safety Executive statistics, falls are the second leading cause of accidental or unintentional injury deaths worldwide. In 2019/20, falls from height accounted for 29 out of 111 workplace deaths (26%), in the UK. In the period 2015-19 there was an average of 36 fatalities per year due to falls from height (24% of all workplace fatalities).

An operative is considered to be working at height if they are completing a task using a ladder or a flat roof, a situation where if there were no precautions in place, they could fall a distance liable to cause personal injury.

Although it is described in the Work at Height Regulations 2005 (WAHR) as being an avoidable practice, there are occasions when working at height in a food storage or preparation facility is the only viable option when completing tasks such as cleaning or maintenance.

In the USA, the Occupational Safety and Health Administration (OSHA) requires that fall protection be provided at elevations of four feet in general industry workplaces. The Working at height, PPE and the European Directive 89/656/CEE, which forms the greater part of the legislation relevant in Europe, providing a similar definition.

Working hours lost to injury is not only bad news for the injured

party, it can also be very detrimental to a business. With the current financial climate being as it is, even losing a small number of staff to avoidable injury could soon see your once proud and functional team replaced with an inexperienced and poorly motivated underperforming monolith.

Set out with the aim of avoiding this, the following guide describes what employers, operatives and other industry employees should be aware of in order to protect themselves from physical injury and/or financial loss.

Risk assessment

In the USA the OSHA states that whether conducting a hazard assessment or developing a comprehensive fall protection plan, thinking about fall hazards before the work begins will help the employer to manage fall hazards and focus attention on prevention efforts.

In the UK, the Health and Safety Executive (HSE) says risk should be assessed "every time there are new machines, substances and procedures, which could lead to new hazards."

An example of this includes whenever a new task brings in significant new hazards, such as the need to complete a task whilst working at height. In this instance, the first course of action is to complete a full risk assessment. An employer is always responsible for completing a risk assessment whenever anyone will be working at height and then keeping this on file for future reference.

This process should look at:

- The complexity of the work being done
- Who is doing the work their level of training, knowledge, skills and experience.
- The weather and surface conditions - such as wet or sloping roofs.
- How materials will be raised to the working area, and where they will be stored.
- The equipment that will be needed.

The risk assessment should also provide details of emergency arrangements including properly developed rescue plans, the people trained in rescue procedures and a list of suitable rescue equipment.

Controlling the risks

In order to ensure the level of risk is kept to a minimum, the HSE states that the employer should follow the hierarchy of control described below when planning any work at height.

The organisation adds that following the framework outlined below will help to ensure that the necessary precautions are in place, so long as the steps at the top are always considered prior to moving down the list.

Step 1: Avoid working at height

Where possible, working at height should be avoided. Sometimes it is possible to assemble the work on the ground and lift it into position using a crane, or removed and brought down to the floor when conducting maintenance and cleaning.

Alternatively, guard rails can be fixed to structural steelwork on the ground, before lifting and fixing at height.

Step 2: Prevent falls from occurring

If there is no choice but to work from height, the next step is to prevent falls from occurring. If there is an existing safe place to work, it should be used. Locations including parapet walls, defined access points, or a flat roof with existing edge protection is likely to be safer than more temporary options.

Step 3: Prevent falls by providing collective protection

Scaffolding, edge protection, handrails, podium steps, mobile towers and mobile elevating work platforms (MEWP's) are all collective protection methods as they protect more than one person at a time. They're used where there is no option but to work at height, and the location doesn't offer an existing safe place to work.

Step 4: Prevent falls by providing personal protection

If collective protection measures cannot be used, maybe as a result of space restrictions, the next step is to prevent falls with personal protection methods. Using a work restraint (or travel restriction) system keeps operatives anchored to a safe point. It stops them getting into a position where they could fall.

Step 5: Minimise the distance and/or consequences of a fall using collective protection

If personal protection methods cannot be used, then the employer should plan to minimise the distance and/or consequences of a fall using collective protection.

Safety netting, airbags or soft landing systems can save a life if the worst happens and someone falls from height.

Step 6: Minimise the distance / effect of a fall using personal protection (the last resort)

The last resort of fall protection is to minimise the distance and/or consequences of a fall using personal protection. This might be needed if you are working on the external wall of a silo or hopper for example, where there's no platform to stand on, or collective protection cannot be used due to the potential fall distance.

Industrial rope access or a fall-arrest system that uses a harness and a fall arrest lanyard would be used. These secure operatives to a suitable, high level anchor point.

Fragile surfaces

People are often killed or injured by falling through a roof that they didn't realise was unsafe. Many people don't know that parts of a roof are fragile. Some surfaces are obviously fragile, whilst others may go unnoticed until it's too late.

Surfaces that could be fragile include:

- Roof lights
- Glass (including wired glass)
- Old liner panels or built-up sheeted roofs
- Chipboard and plywood boards
- Asbestos and fibre cement sheets
- Slates and tiles
- Metal sheets

Using a safety harness safely

Described as a safety method that is only acceptable when other methods have been considered and ruled out, arresting falls with harnesses and fall-arrest lanyards must only be considered as a



last resort as this precaution possesses its own unique dangers.

When deciding what sort of fall-arrest harness and lanyard you need, the employer should take into account where it's being used, how far the operative might fall, as well as any obstructions they could strike. They'll also need to consider the pendulum effect, a term used to describe how far the falling person might swing from side to side as the fall is being arrested.

The choice of materials used in fall protection PPE can also be particularly important in heavy industry maintenance and inspection works. Certain hostile or corrosive environmental conditions may call for specific performance characteristics. If this is the case, then the advice of a reputable fall protection equipment manufacturer should be sought.



Training is essential

Like with any new piece of equipment, operatives should never use a harness to work at height unless they have been trained. This is because like with most safety equipment, not knowing how to use it effectively will render using it either futile or in some cases.

This is because it's unlikely that they will know how to fit it properly and inspect it for damage. It is also critical for them to know the difference between the right and the wrong locations and materials to attach it to.

Using and understanding PPE correctly is clearly critical, thus the importance of user manuals in the Regulation (EU) 2016/425, as they are not only mandatory, but also supervised and approved by the notified body in responsible for PPE certification.

Point 5 talks to the need for instruction documentation: 'Adequate information on each item of personal protective equipment, required under paragraphs 1 and 2, shall be provided and made available within the undertaking and/or establishment.' PPER 2016/425 requires manufacturers of fall protection PPE to provide printed instructions with each item of PPE.

Instructions may additionally also be provided in a downloadable format, but only subject to printed instructions packaged with each item of PPE. Users and those responsible for their safety should always ensure that fall protection equipment is being used in line with manufacturers' guidelines and that all instructional material has been read and understood before use.

Have a rescue plan in place

Before a task at height can be completed using a harness, a rescue plan must always be in place. The rescue plan is a term to describe the safety document that details the procedures and protocols that should be enacted if someone falls while wearing a harness.

Although seeing your workmate dangling from a harness is probably something that a lot of would find quite amusing, they will need to be rescued quickly. This is because aside from injuries they might have sustained from falling, people in this situation can experience a condition called suspension syncope - where the suspended person faints, causing further complications and injury.

It is also worth bearing in mind that if someone has been suspended in a harness for any amount of time, then assistance

from a suitably qualified person must be called as the casualty will require a full medical assessment.

Although the HSE does refer to the use of fall arrest lanyards and harnesses as being a last resort, the cold hard fact is this - these devices could be all that protects you from falling to your death. So, make sure that when using one, you clip onto a suitable anchorage point at all times.

The consequences of non-compliance

If a worker is injured because a company has failed to undertake appropriate risk assessments or effectively apply the hierarchy of control and/or provision appropriate PPE, the consequences can be grave.

Every injury that results in a loss of working time if is thoroughly investigated, and any breach of regulations, whether in the UK, USA or Europe will likely be cited as evidence of negligence in a court of law.

It's also important to remember industrial settings are constantly evolving due to new processes and/or machinery etc. As such, so are potential risks. This, coupled with the introduction of new standards and product advancements, means that regular reviews of risk assessments and PPE should be undertaken.

Companies coming under scrutiny for safety failings in light of the regulations will not only incur a fine, which can be very severe, but face significant and potentially long-term reputational damage.

Working at height - five things you should know

Working at height should always be avoided

Employers must provide suitable fall protection whenever anyone is working at height.

Employers should also follow a clear hierarchy to decide the right type of safety measures to use.

Operatives should only use equipment that they have been specifically trained to use.

The type of access equipment used will always be determined by the outcome of a risk assessment.