

Health and safety on mezzanine floors

We've written extensively about [the advantages of mezzanine floors](#) in terms of opening up the maximum space available within a commercial or industrial setting and transforming that setting without the need to alter the physical framework of the existing building. While much of the focus of what we've written has been on the variety of mezzanine flooring available and the advantages it offers, it's also important to understand the responsibilities that come with opting for a mezzanine floor solution. While many of these responsibilities involve liaising as closely as possible with a designer and manufacturer such as United Storage Systems, and [asking the right questions](#) prior to design and installation, the responsibility to work safely within, across and under a mezzanine floor is something which has to be addressed every working day.

The health and safety aspect of a mezzanine floor installation first comes to the fore even before the space is utilised by the end user, during the installation process itself. Working with a professional and experienced installation company should offer a degree of certainty that the correct steps are being taken to ensure the safety and well-being of everyone involved, but it's still vitally important to understand the approach which needs to be taken and the kind of thorough attention to detail which is required not only for the sake of the well-being and safety of all involved, but also in order to comply with all relevant legislation. The legislation in question in these circumstances is contained in [Section 5 of The Management of Health and Safety at Work Regulations 1999](#) and states that:

(1) Every employer shall make and give effect to such arrangements as are appropriate, having regard to the nature of his activities and the size of his undertaking, for the effective planning, organisation, control, monitoring and review of the preventive and protective measures.

(2) Where the employer employs five or more employees, he shall record the arrangements referred to in paragraph (1).

To meet these requirements, the team carrying the work out should create a Risk Assessment and Method Statement (RAMS), a detailed document which sets out the full range of possible hazards present on the site, the potential harm these hazards could cause, the people who will be at risk in these circumstances, and the controls which will be put in place to mitigate those risks. In circumstances in which electrical tools are going to be used to carry the work out, for example, the RAMS might state that all electrical powered tools being used will be battery powered or run at 110 volts to minimise the risk of users experiencing an electric shock, that safety checks of all electrical equipment are carried out prior to use, and that any equipment which has been hired for the purposes of this job needs to be delivered with a valid safety certificate and full instructions for safe use. On a wider basis, the RAMS should state that all operatives involved in carrying out the work of installing a mezzanine or adapting an existing mezzanine should undergo a safety induction on arrival at the site, and that the professional in charge of carrying out the work should assess the site to ensure that it is safe to work along the lines set out in the existing RAMS. Although each mezzanine installation or adaptation is going to be a unique job with its own risks and challenges, there are certain health and safety precautions which will form part of any RAMS and be carried across all jobs. These include wearing high visibility clothing and

steel toecaps, using hearing protection when working with power tools and wearing hard hats whenever structure and building works are being carried out.

Once a mezzanine floor has been safely installed the focus switches to one of ensuring the safety of anyone accessing the floor. This might cover warehouse workers storing items of stock, shoppers and members of the public accessing the mezzanine floor space of a retail outlet and workers using the mezzanine floor in a manufacturing capacity. The key publication in legal terms is [The Health and Safety at Work Act 1974](#), which sets out in detail the steps which businesses have to take to protect employees and members of the public. The measures contained within the act are sweeping and broad-ranging and cover many aspects of workplace safety which apply whether a mezzanine floor is in place or not. The creation of a RAMS, as set out above, for example, complies with the requirement in the 1974 act for employers to provide 'such information, instruction, training and supervision as is necessary'. Other more mezzanine-specific standards which companies need to comply with when using mezzanines include BS EN ISO 14122-3:2016, which deals with 'Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails', and sets out detailed minimum standards for the provision which needs to be made in terms of accessing a mezzanine floor and, in the case of mezzanine gates, making best use of the space created. In addition, The Work at Height Regulations 2005, as amended by the Work at Height (Amendment) Regulations 2007, set out directives which place a strict duty of care on any employer responsible for others who are working at height (i.e. on a mezzanine floor) and are therefore at risk of a fall which could badly injure them. Clearly, the expectation would be that a risk assessment of the mezzanine floor was carried out during the design and installation phase, and that any features needed to minimise the risk of a fall – and to comply with the relevant legislation – would be built in from the beginning. That is the process undertaken when USS design and install a mezzanine floor, for example, but anyone working with an existing mezzanine floor, or one which, to the best of their knowledge, has not been risk-assessed for a period of time, needs to carry out their own risk assessment to ensure that all necessary measures have been implemented. This is particularly true if the way in which the mezzanine floor is used has changed over time – from a storage space which only needs to be accessed occasionally to a working area which people need to access throughout each day, for example. The risk of a fall could occur when someone is accessing the mezzanine, when they are working near the edge or – in some cases – through the actual body of the mezzanine itself. Standard questions which need to be asked include:

- What is the size and weight of the type of items likely to be moved on and off the mezzanine?
- What is in place to move people on and off the mezzanine – i.e. are ladders in place or have stairs been installed, and are forklifts used to move items around the mezzanine and chutes, conveyors and hoists etc. used to move items on and off?
- Are safety barriers in place to prevent falls from the edge of the mezzanine?
- Is the mezzanine itself structurally sound and free from signs of damage such as cracking and bending?
- Has the structural integrity of the mezzanine been inspected by a qualified engineer?

- Is the load capacity of the mezzanine that which was intended when it was designed and installed?
- Is the surface of the floor of the mezzanine safe to work on, with features such as non-slip flooring?
- Is the lighting of the mezzanine floor area sufficient for safe access and use?

As stated, an assessment of this kind needs to be carried out if it was not done at the time of installation, or if the use and capacity of the mezzanine has increased significantly.

Protection around the edge of the mezzanine to prevent people or objects falling below should be par for the course, and any edge protection which is installed needs to meet the standards set out in The Building Regulations 2010 , in Part K, the regulations designed to protect from falls, collisions and impacts. These regulations state that adequate guard rails need to comply with EN 14122-3:2016, which means that handrails should include the following:

- A top rail with a minimum height of 1100mm
- One or more intermediate rails which are placed a maximum distance of 500mm apart
- A kick plate with a minimum height of 100mm to prevent smaller items rolling or being kicked off the mezzanine
- The railing has to be fixed to the mezzanine floor with sufficient strength to stop anyone who falls against it from falling over the edge

In addition to the physical make-up of the mezzanine floor, the actions of employees working on the floor can play a significant role in improving health and safety. The Working At Height guide published by the Health and Safety Executive (HSE) states that employees have a legal duty to do the following:

- Report any safety hazard they identify to their employer
- Use any equipment or safety devices supplied in accordance with training and instructions given. If they think that doing so would be unsafe, they need to seek further instructions.

At the same time, employers need to consult their employees on matter of health and safety, discussing issues such as any risks which arise from the work they carry out, ways in which they could manage or control those risks and the best methods, in their view, of providing information and training.

Once the mezzanine floor has been installed and is operative, the overarching health and safety requirements are to establish a regular inspection regime to check for damage to the floor, allied to on-going vigilance with regard to matters such as spills and the presence of objects which might cause trips and falls. The maximum load requirements of the mezzanine floor, as well as restrictions of use (such as whether fork lift trucks can operate on the floor itself) should be clearly displayed on signage throughout the building, and employees should be encouraged to take note of this signage and comply with the restrictions in place. All

employees should also know the escape route from the mezzanine floor in the event of a fire or other dangerous incident, and the issue of fire safety in general, as well as informing the original design, needs to be an on-going concern for everyone working in the building. In simple terms, the health and safety aspects of installing and then working on a mezzanine floor need to be part of a company-wide culture which places the health and well-being of employees and visitors front and centre. When this culture is embedded in a company, the health and safety perspective of any aspect of working on, around or under the mezzanine floor will inform all decisions. To give one small example – if items being lifted from the ground level to the mezzanine floor are not secured properly they could become unstable during the process and fall. One simple way of securing smaller items would be to cover the items and the pallet in shrink wrap, a simple technique, but one which is far more likely to occur to employees if the health and safety aspect of any task is foremost in their minds.