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Guide to the Safety, Health and Welfare at Work (General Application) Regulations 2007



**Part 4:
Work at Height**

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Safety, Health and Welfare at Work
(General Application)
Regulations 2007**

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Guide to Part 4 of the General Application Regulations 2007

Part 4: WORK AT HEIGHT

Introduction

This Guide is aimed at safety and health practitioners, employers, managers, employees, safety representatives and others to give guidance on Part 4 (Regulations 94 to 119) of the Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299 of 2007) as amended by the Safety, Health and Welfare at Work (General Application) (Amendment) Regulations 2007 (S.I. No. 732 of 2007) relating to work at height. The objective of the Guide is to give general guidance aimed at the prevention of occupational accidents or ill health. *It is not intended as a legal interpretation of the legislation.*

In this Guide the text of the Regulations is shown in italics.

From 1 November 2007, Part 4 of the General Application Regulations 2007 re-transposes Directive 89/955/EEC as amended by Directive 2001/45/EC and replaces the Safety, Health and Welfare at Work (Work at Height) Regulations 2006 (S.I. No. 318 of 2006), which are revoked from that date.

The General Application Regulations 2007 are made under the Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005) referred to elsewhere in this Guide as “the Act”.

Aims of the work at height requirements

The objective of Part 4 of the General Application Regulations 2007 is to reduce deaths and injuries at work caused by falls from height as these account for a significant percentage of workplace fatalities and serious injuries each year.

Part 4 of the General Application Regulations sets out the basic principles for safe work at height for all sectors of employment and provides a fundamental framework for safe working at height, based on risk assessment, applicable to the wide range of work activities carried out at height.

Purpose of this guidance

This Guide sets out the key requirements for safe working at height and provides guidance on the main types of work equipment available for work at height. This guidance is for anyone directly or indirectly involved in work at height: employers, employees, supervisors, the self-employed, those in control of work premises and those involved in inspecting work equipment or sites. Those who hire out work equipment also need to be aware of the Regulations.

What is “work at height”?

Work at height means working in a place (except a staircase in a permanent workplace) where a person could be injured by falling from it, even if it is at or below ground level.

Do the rules apply to you?

The work at height Regulations apply to all work at height where there is a risk of a fall liable to cause personal injury. They place duties on employers and the self-employed.

Some examples of activities covered by the Regulations include: using a kick stool or stepladder in a stock-room or library; order picking using a fork-lift truck with an integrated platform; using a mobile elevating work platform to erect steel work; using trestles and ladders to paint or clean; changing lamps or ceiling tiles in an office; working on the back of a lorry to sheet a load; working on the top of a fuel truck; climbing masts or poles; rigging lighting for a concert or stage production; using harnesses and ropes professionally to instruct in abseiling or rock climbing; working close to an open excavation or cellar trap door; erecting bill posters at a height; erecting or working on a scaffold.

What are your duties as an employer?

You must do all that is reasonably practicable to prevent anyone falling a distance liable to cause personal injury.

The Regulations set out a simple hierarchy for managing work at a height:

- avoid work at height where this is reasonably practicable;
- use work equipment or other measures to prevent falls where you cannot avoid working at height; and
- where you cannot eliminate the risk of a fall, use work equipment or other measures to minimise the distance and consequences of a fall.

The Regulations also require employers and the self employed to ensure that:

- all work at height is properly planned, organised, supervised and carried out;
- the place where work at height is done is safe;
- all work at height takes account of weather conditions;
- those involved in work at height are instructed and trained;
- equipment for work at height is appropriately inspected;
- the risks from fragile surfaces are properly controlled; and
- injury from falling objects is prevented.

What do employees need to know about work at height?

The Safety, Health and Welfare at Work Act 2005 places duties on employees to:

- comply with statutory provision such as the work at height Regulations;
- protect their own safety and health, as well as the safety and health of anyone who may be affected by their acts or omissions at work;
- ensure that they are not under the influence of any intoxicant to the extent that they could be a danger to themselves or others while at work;
- co-operate with their employer with regard to safety, health and welfare at work;
- not engage in any improper conduct that could endanger their safety or health or that of anyone else;
- participate in safety and health training offered by their employer;

- make proper use of all machinery, tools, substances etc. and of all personal protective equipment provided for use at work; and
- report any defects in the place of work, equipment etc. which might endanger safety and health.

Requirements for working at height

Part 4 of the General Application Regulations requires employers to carry out a risk assessment for all work conducted at height and to put in place arrangements for:

- eliminating or minimising risks from working at height;
- safe systems of work for organising and performing work at height;
- safe systems for selecting suitable work equipment to perform work at height; and
- safe systems for protecting people from the consequences of work at height.

The risk assessment and the action taken should be proportionate to the harm that could occur if no action was taken. It should include a careful examination of what harm could be caused from working at height with a view to taking the necessary steps to reduce the likelihood of this harm occurring, either through avoiding the activity or, where this is not reasonably practicable, by carrying it out in a safe manner using the appropriate work equipment.

Employers and self-employed persons must ensure that:

- any work at height performed in their undertaking or by their employees on any other site or premises, and the equipment provided for such work, complies with the requirements of Part 4 of the General Application Regulations and does not put others at risk, e.g. members of the public;
- if they send workers to another site, that they are not at risk from working at height on that site. All employers at the site must co-operate to make sure employees are not asked to do tasks where there is inadequate protection; and
- they consult their employees on matters relating to safety and health with respect to work at height and, where appropriate, in the development of risk assessments for work at height.

Wherever there are multiple contractors, a written formalised way of proceeding should be agreed so that it is clear who is responsible for particular aspects of the work at height. Every contractor involved with the site will have duties under safety and health legislation, but the extent of the responsibilities will depend on the circumstances and are best agreed in writing before the work commences. Further guidance can be obtained from the HSE publication *Use of Contractors – A Joint Responsibility* (INDG368).

Those who provide equipment for use at work but do not control its use or the premises where it will be used should still ensure that the work equipment complies with Part 4 of the General Application Regulations to the extent that their control

allows. The Regulations require that all the risks of the work be managed by the relevant people to ensure safety. It is vital that this is communicated to all those involved on multi-occupied sites. For example, where a scaffolding hire company delivers the equipment to a site and erects it on behalf of the user, the hire company must ensure that it has been erected in accordance with the Regulations. The ongoing maintenance, inspection and recording requirements may, however, fall on the employer in control of those using the scaffold.

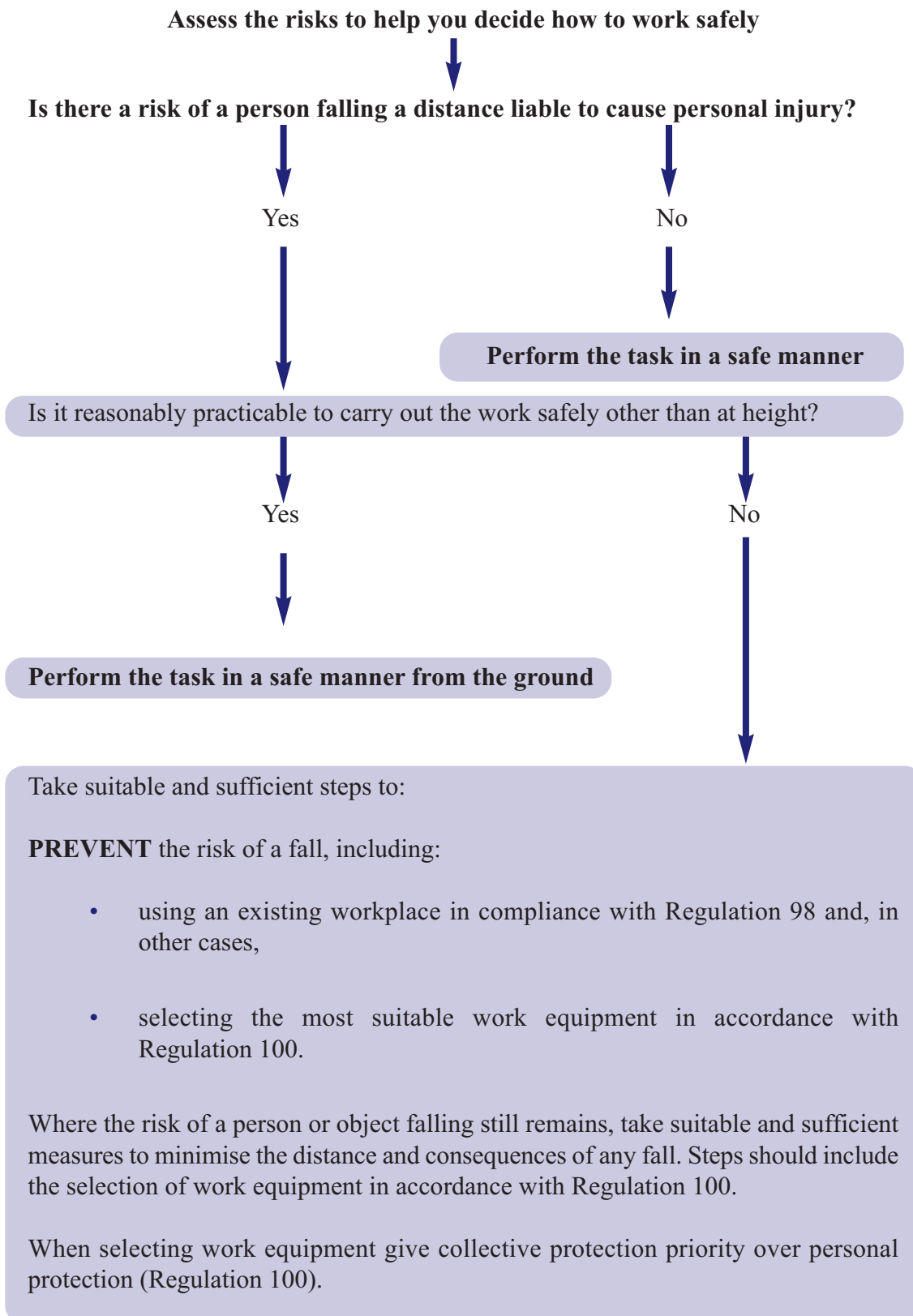
Employees using their own equipment for work at height

Part 4 of the General Application Regulations also applies to personally owned equipment used for work at height. Employers need to ensure that such equipment is checked and assessed as being suitable. This is particularly important where an employee brings his or her own tools onto the site and where the employee chooses to use his or her own equipment for work at height (e.g. safety harnesses). The employer needs to establish who will be using such equipment (especially where it might be shared) and that the users are clear as to how to use it. The employer should also ensure that safe loading is adhered to and that it is compatible with other safety equipment, such as anchor points. An employer should ensure that any personally owned tools used by their employees are appropriate for the task, are in good condition and can comply with the safety and health management controls identified in any risk assessment. The responsibility for the safe application and use of personally owned tools and equipment cannot be derogated to employees carrying out the work.

Application to offshore activities

Part 4 of the General Application Regulations applies fully to offshore activities including offshore installations, wells, pipelines, pipeline works and connected activities within Irish territorial waters.

Figure 1: Work at height flow chart



Regulation 94: Interpretation for Part 4

94. (1) In this Part:

“access” and “egress” include ascent and descent;

“fragile surface” means a surface, including fittings, that would be liable to fail if a person’s weight were to be applied to it in reasonably foreseeable circumstances;

“ladder” includes a fixed ladder and a stepladder;

“line” includes rope, chain or webbing;

“personal fall protection system” means—

(a) a fall prevention, work restraint, work positioning, fall arrest or rescue system, other than a system in which the only safeguards are collective safeguards, or

(b) rope access and positioning techniques;

“scaffold” means any temporary structure, including its supporting components, whether fixed, suspended or mobile, that is used—

(a) for supporting employees and materials, or

(b) to gain access to any structure,

and includes a working platform, a working stage, a gangway, a run and a ladder or stepladder (other than an independent ladder or stepladder that does not form part of such a structure), together with any guard-rail, toe-board or other such safeguard and all fixings thereon, but does not include—

(i) lifting equipment, or

(ii) a structure used only to support another structure or equipment (including lifting equipment),

and “scaffolding” shall be construed accordingly;

“supporting structure” means any structure used for the purpose of supporting a working platform and includes any plant used for that purpose;

“work at height” means work in any place, including a place—

(a) in the course of obtaining access to or egress from any place, except by a staircase in a permanent place of work, or

(b) at or below ground level,

from which, if measures required by this Part were not taken, an employee could fall a distance liable to cause personal injury and any reference to carrying out work at height includes obtaining access to or egress from such place while at work;

“work equipment” means any machine, appliance, apparatus, tool or installation for use at work (whether exclusively or not) and includes anything to which Regulations 101 to 114 apply;

“working platform” means any platform used as a place of work or as a means of access to or egress from a place of work, including any scaffold, suspended scaffold, cradle, mobile platform, trestle, gangway, gantry and stairway that is so used.

(2) Any reference in this Part to the keeping of a copy of a report or plan includes reference to it being kept in a form in which it is —

(a) capable of being reproduced as a printed copy when required, and

(b) secure from loss or unauthorised interference.

Work at height

The Regulations do not specify a minimum height requirement for work at height. Part 4 applies to all work activities where there is a need to control a risk of falling a distance liable to cause personal injury. This is regardless of the work equipment being used, the duration the person is at a height or the height at which the work is performed. It includes access to and egress from a place of work. It would, for example, include:

- working on a scaffold or from a mobile elevated work platform (MEWP);
- working on the back of a lorry, e.g. sheeting a load;
- container-top working in docks, on a ship or in a freight yard;
- arboriculture and forestry work performed in trees;
- using cradles or ropes to gain access to parts of a building, or a ship under repair in a dry dock;
- climbing permanent structures, such as gantries, masts or telephone poles;
- working close to an excavation area or a cellar opening, where someone could fall into it and injure themselves or others;
- painting, pasting or erecting bill posters at height;
- work on staging or trestles, e.g. at a concert or for filming;
- using a ladder, stepladder or kick stool for shelf-filling, window-cleaning, shop-fitting or other maintenance tasks (e.g. changing a light bulb);
- using man-riding harnesses on offshore installations; and
- working in a mine-shaft.

The risk assessment and action required to control risks from using a kick stool to collect books from a shelf will be simple (e.g. not overloading oneself, not overstretching). However, the action required for a complex construction project will involve significantly greater considerations and assessment of risk. Further guidance on risk assessment is provided in relation to Regulation 98.

The following are excluded from the requirements of this Part 4 of the General Application Regulations:

- Slips, trips and falls on the level;
- Falls on permanent stairs if there is no structural or maintenance work being undertaken;
- Work in, for example, an office on the upper floors of a multistorey building where there is no risk of falling (except activities within the workplace which do involve a risk of falling, e.g. from a stepladder); and
- Work carried out by private individuals (e.g. maintenance work in their own homes that is not for the purposes of business or trade).

Where a person is employed by a private householder to do work, e.g. cleaning windows or repairing gutters on a private home, the person employed to do the work has duties under these Regulations. The householder does not have duties under these Regulations.

Also excluded from the requirements of the Regulations are activities such as climbing and caving where these are carried out by way of sport, recreation, or other leisure or adventure activities. The Regulations do apply, however, to persons employed, including to those self-employed, in such activities. The employer of such persons has a duty to ensure the safety and health of his or her employees and other persons under his or her control.

Regulation 95: Organisation, planning and risk assessment

95. (1) *An employer shall ensure that—*
- (a) *work at height is properly planned, appropriately supervised and carried out in a manner that is, so far as is reasonably practicable, safe and without risk to health, and*
 - (b) *in planning work at height—*
 - (i) *the selection of work equipment is in accordance with Regulation 100,*
 - (ii) *an appropriate risk assessment and safety statement pursuant to sections 19 and 20 of the Act are prepared, and*
 - (iii) *a plan is prepared for emergencies and rescues, without prejudice to section 11 of the Act.*
- (2) *In identifying measures to comply with this Part, an employer shall take account of the risk assessment.*

Regulation 95 requires employers to plan their work properly; to ensure it is appropriately supervised and that it is carried out in a safe manner. Planning includes the selection of work equipment and preparing for emergencies. Employers should:

- plan the work and use suitable work equipment;
- provide supervision proportionate to the findings of the risk assessment and the experience and capability of the people involved in the work. Employees may be trained to a nationally accredited standard, but may still need to be acquainted with the layout and the peculiarities of the site and have the task(s) required of them carefully explained;
- make sure those affected understand the risk assessment and what they must do to comply with it. This may be a briefing session to make sure workers are aware of hazards and when they should ask for further assistance. Information may need to be made more widely available, as the conduct of others in the workplace may be very important to those working at height above or near them;
- plan for emergencies and rescue. Where necessary have a rescue plan in place before the work starts. Employers should assess this plan throughout the lifetime of the project and update it if there are any substantial changes to the work being carried out. The plan needs to take account of possible risks to rescuers. It should not be assumed that the emergency services will be able to effect a rescue in all situations, especially within the necessary time (see also guidance on Regulation 109 – personal fall protection systems);
- Involve employees or their representatives. Consulting the workforce will encourage them to be more aware of risks from work at height and their duties under safety and health legislation. It will also help employers to comply with their duties.

Regulation 96: Checking of places of work at height

96. *An employer shall ensure that the surface and every parapet, permanent rail or other such fall protection measure at every place of work at height are checked visually prior to use and at appropriate intervals during use.*

Regulation 96 requires that the surface conditions and other permanent features where work at height will be taking place are checked before use and at appropriate intervals during use, in order to identify

whether there are any obvious defects. This would include, for example, checking the ground surface on which a tower scaffold or a portable ladder was to be placed. If an employer is unable to do this personally, he or she should ensure that a competent person carries out the necessary checks. The results of such checks need not be recorded.

Regulation 97: Weather conditions

97. *An employer shall ensure that work at height is carried out only when weather conditions do not place the safety and health of employees at risk.*

Regulation 97 requires employers to ensure that work at height is carried out “only when the weather conditions do not jeopardise the safety and health of employees”. The risk assessment and planning arrangements should, therefore, take into account the effect that the weather can have on outdoor work at height.

The General Application Regulations require that work equipment be suitable for the conditions intended and that suitable and sufficient lighting be provided at any place where work equipment is in use. Lightning, wind, rain, snow, ice, temperature and sun will change the working conditions during the job and may increase the risks that need to be addressed. Protective gloves, sun block, non-slip footwear etc. may help, but the risk assessment should consider wider aspects such as whether bulky clothing could get caught up in machinery or make access more dangerous. The build-up of mud on ladders, for example, will make them less safe, as would placing them on a surface that may have become slippery. Extreme heat can make people exhausted more quickly and may increase human error. Regular work breaks may reduce the risk of an accident occurring. Wind can blow materials such as sheet insulation, decking and timber off edges and such material should be secured to prevent it being blown away.

Regulation 98: Avoidance of risks from work at height

98. *Taking account of the general principles of prevention in Schedule 3 to the Act, an employer shall—*

- (a) *ensure that work is not carried out at height where it is reasonably practicable to carry out the work safely and without risk to health otherwise than at height,*
- (b) *without prejudice to the generality of paragraph (a), ensure that work is not carried out at height unless it is reasonably practicable to do so safely and without risk to health,*
- (c) *where, having regard to paragraphs (a) and (b), it is necessary to carry out work at height, take suitable and sufficient measures to prevent an employee falling a distance liable to cause personal injury, including—*
 - (i) *ensuring that the work is carried out—*
 - (I) *from an existing place of work, or*
 - (II) *in the case of obtaining access or egress, by using an existing means of access or egress,**in compliance with this Part, where it is practicable to do so safely and*

- under appropriate ergonomic conditions, and*
- (ii) where it is not practicable for the work to be carried out in accordance with subparagraph (i), ensuring that suitable and sufficient work equipment, in compliance with Regulation 100, is provided to prevent a fall occurring,*
- (d) where the measures taken under paragraph (c) do not eliminate the risk of a fall occurring—*
- (i) provide sufficient work equipment, in compliance with Regulation 100, to minimise the distance of a potential fall and the risk of personal injury, and*
- (ii) without prejudice to the generality of paragraph (c), provide such additional training and instruction or take other additional suitable and sufficient measures to prevent, so far as is practicable, any employee falling a distance liable to cause personal injury.*

Assess the risks to help decide how to work safely

Before working at height employers must assess the risks and take whatever steps the assessment shows are necessary to work safely. A person (either the employer or an employee) who is sufficiently experienced to be able to identify competently the safety and health risks arising out of the work should carry out the assessment.

Work at height is an activity that has generally well-established procedures of good practice and, in nearly all cases, employers should be able to follow these to carry out work safely. Risk assessment for the purposes of the work at height Regulations will require them to compare what they do with what is accepted as good practice. If an employer is doing what good practice suggests, that will normally be enough to comply with the law. If not, it will be necessary to take action to reach the standard. Good practice may be regarded as a “generic” risk assessment for a particular kind of work at height. It may be used for the purposes of risk assessment if the circumstances of the work fall wholly within the scope of the good practice. However, there may be occasions when a more specific assessment is called for (e.g. when trainees are involved).

It may be necessary to reassess the risks and, if needed, introduce other protection methods if circumstances change. There should be few circumstances where there is no established good practice or where it does not apply to the work. For those instances, where the good practice available is limited, or applies only partly to the task, it should be followed so far as it is relevant and any residual risks should be assessed. In those few instances where good practice does not exist, start from the first principles of risk assessment using the Health and Safety Authority’s *Guidelines on Risk Assessment and Safety Statements* and call upon expert assistance as necessary.

Whatever action is taken to control the risk should be proportionate to the risk of harm and reflect what is reasonably practicable, but remember serious injuries may be caused by falls from relatively low heights. Do not assume that little or nothing need be done to prevent them. The health of workers may need to be taken into consideration for some types of work at height.

Particular attention will need to be paid to the risk assessment and its review, where necessary getting expert advice and discussing issues with employees. Drivers of straddle carriers and operators of large cranes might, for example, require a high level of physical stamina and agility to gain safe access to their work positions, which may be a considerable height above ground. Each assessment should be proportionate to the risks involved, but some of the factors that will need to be considered include:

- the environment and conditions of the site, including its location, access and egress to and from the site, weather and ground conditions on the site and the risks relating to other activities on the site or surrounding area;
- the task to be performed, including the extent of the task and its complexity;

- the duration and the frequency with which the task needs to be performed;
- the people involved, including the numbers involved in the work, the degree of their exposure to the risk, the competence of the workers involved and the levels of supervision required;
- the risks to, or presented by, those not directly involved in the work;
- the work equipment and/or other structures to be used, including the suitability of existing structures for work at height, the existence of fragile surfaces, the selection of work equipment to be used and any risks arising from pre- and post-use of the work equipment (e.g. installing and dismantling scaffolding or using a mobile elevating platform or ladder on a busy road).

**Follow the safe work at height hierarchy:
–Avoid, Prevent, Mitigate –
and give collective measures priority.**

Avoid work at height so far as reasonably practicable.

If it is not necessary to work at height, don't.

It may, for example, be possible to assemble a structure on the ground and then lift it into place using the appropriate lifting equipment, or pole-cleaning systems may be used for cleaning windows so that the work can be carried out from the ground. Under the Safety, Health and Welfare at Work (Construction) Regulations, designers need to consider those carrying out construction work and others who could be affected by it, for example, members of the public. They should plan to allow for those constructing and maintaining a structure to work safely and to avoid the need for work at height where reasonably practicable.

In making an assessment of the risks of working at height, the risks of alternative methods of working must also be considered. In some circumstances the risk assessment may justify the use of a safe work at height system rather than a more risky ground-based system. An excess of water, for example, from a window cleaning system could be dangerous if it fell on a pavement in icy weather. This needs to be considered in the overall risk assessment.

Prevent a fall, so far as is practicable

Where it is not reasonably practicable to avoid carrying out work at height, employers must take suitable and sufficient measures, including the choice of appropriate work equipment, to enable the work to be carried out in a way which, so far as is practicable, prevents a person from falling a distance liable to cause personal injury. Suitable and sufficient measures are measures which prevent all reasonably foreseeable accidental falls.

A scaffold, for example, properly erected with guard-rails, toe-boards and all other appropriate safety measures in place, would not normally require a safety net, as it would be reasonable to expect that the scaffolding would prevent a fall. If that

scaffolding, however, gave access to a fragile surface it would be reasonable to expect further measures to prevent a fall. One way of meeting the duty to prevent falls is to ensure that work at a height is done safely, under appropriate ergonomic conditions, from an existing workplace that meets the criteria set out in Regulation 99. This Regulation specifies that it must have sufficient edge protection, including, as necessary, balustrades, guard-rails and toe-boards or other barriers that would prevent a fall. Thus, the place of work, which could be a permanent structure such as a building or an industrial plant, the top of a piece of machinery or a vehicle, or an item of work equipment such as a scaffold or a mobile elevating work platform (MEWP), must be safe, i.e. there is no foreseeable risk of a person falling from it. A place of work that required edge protection to make it safe would not meet the conditions of this paragraph and so would require the duty-holder to use the appropriate work equipment to make it safe. Safe access and egress also has to be considered at this stage.

“Ergonomic conditions” relate to factors such as the physical strain of using the tools provided, the suitability of the working space for the task to be performed properly, or the space for passage of loads and people, including adequate provision for loading and unloading. Employees should not be expected to exert undue force or stretch or reach beyond their normal strength or physical reach limitations to work safely. The effects of temperature or moisture (or both) should also be taken into account. Once the duty-holder has taken measures to avoid or prevent injury from a fall, such as by providing a properly constructed scaffold with guard-rails, there is no need to take further action, e.g. by providing nets. However, if a guard-rail has been temporarily removed, introducing a residual risk of falling through the temporary gap, this would need to be addressed. Further action may also be required, for example, when working on a MEWP on a travel route, where there may be a high risk of collision. The resulting unexpected violent movement may make it unlikely that guard-rails alone would prevent a person from being thrown out and injured.

Mitigate the consequence of any remaining fall risks

Despite the method of work chosen, if it is not practicable to avoid or prevent a fall, employers should ensure that both the distance of the fall and its consequences are minimised. Nets, air bags or other soft landing systems, for example, may be used as a safety measure. The equipment chosen to arrest a fall should minimise injury to the person concerned, but it is necessary to consider the whole site where the work is being performed. Trailing lanyards, for example, may cause a significant tripping hazard and are rarely suitable at a height below four metres. The consequences of falls will include the effects on the fall protection equipment used. Someone whose fall has been arrested by a personal fall arrest system may suffer injury caused by deceleration and from hanging motionless in the harness after the fall. The distance of the fall will also be critical. See also guidance for the Regulations on fall protection systems in relation to rescue.

Instruction and training

The users of equipment such as scaffolds, mobile elevating work platforms, ladders and mobile towers should receive adequate instruction and, where necessary, training in the use of the equipment. Workers will often be familiar with the use of the equipment but may not have received specific instruction in its safe use. The instruction required will depend on the type of equipment and its use. For example, the users of ladders should know how to visually check the ladder before use, how to secure the ladder, the importance of not over-reaching, how to carry tools, the importance of having three points of contact while working, the need to keep the top three rungs free, the requirement that ladders used for access should project at least one metre beyond any landing and be secured, how to protect members of the public, the correct angle (4:1 ratio), how to cope with sloping footpaths or slippery surfaces, the dangers from overhead lines, what footwear should be used and the dangers of use in wet or windy conditions.

Regulation 99: Protection of places of work at height

99. *An employer shall ensure that a place of work, or means of access or egress to hereto, at which work at height is, or is to be, carried on—*
- (a) is stable and of sufficient strength and rigidity for the purpose for which it is intended to be or is being used,*
 - (b) where applicable, rests on a stable, sufficiently strong surface,*
 - (c) is of sufficient dimensions to permit the safe passage of employees and the safe use of any plant or materials required to be used and provide a safe working area having regard to the work to be carried out there,*
 - (d) is provided with suitable and sufficient edge protection,*
 - (e) possesses a surface that has no gap—*
 - (i) through which an employee could fall,*
 - (ii) through which any material or object could fall and injure an employee, or*
 - (iii) giving rise to other risk of injury to any employee, unless measures have been taken to ensure that no employee could be so injured,*
 - (f) is so constructed, used and maintained in such condition as to prevent, so far as is reasonably practicable—*
 - (i) the risk of slipping or tripping, or*
 - (ii) any employee being caught between it and any adjacent structure, and*
 - (g) where it has moving parts, is prevented by appropriate devices from moving inadvertently during work at height.*

Regulation 99 sets out the criteria by which employers should judge whether a place of work at height is safe. If it meets these criteria, work may be carried out from there without the need to use work equipment to make it safe. This might, for example, apply on a permanent structure which had a strong, level surface and parapets of sufficient height to prevent falls, or on a piece of industrial plant which has permanent guard-rails and other built-in features to prevent falls.

The place of work must have a suitable surface. The surface is the specific site on or from which employees perform their tasks. There will be conditions which will make a fall from any work surface more likely. For example, if the working surface is not level, there are obstructions or it is slippery or greasy, special thought needs to be given to worker safety. The surface must not be fragile, i.e. it must be able to take the weight of people or materials passing across it and be able to sustain the impact of people or materials liable to fall on to it. It is important to note that this should take account of deterioration caused by weather, climatic conditions, age, impacts and other relevant factors. It must not be possible to fall off the edge or through a hole in the surface.

Regulation 100: Selection of work equipment for work at height

100. *An employer shall—*
- (a) in selecting work equipment for use in work at height—*
 - (i) give collective protection measures priority over personal protection measures, and*

- (ii) *take account of the following:*
 - (I) *the working conditions and the risks to the safety and health of employees at the place where the work equipment is to be used;*
 - (II) *in the case of work equipment for access and egress, the distance and height to be negotiated;*
 - (III) *the distance of a potential fall and the risk of personal injury;*
 - (IV) *the duration and frequency of use of the equipment;*
 - (V) *the need for easy and timely evacuation and rescue in an emergency;*
 - (VI) *any additional risk posed by the use, installation or removal of that work equipment or by evacuation and rescue from it;*
 - (VII) *the other requirements of this Part, and*
- (b) *select work equipment for work at height that—*
 - (i) *has characteristics, including dimensions, that are appropriate to the nature of the work to be performed and the foreseeable loadings,*
 - (ii) *allows safe passage, and*
 - (iii) *in other respects, is the most suitable work equipment, having regard in particular to Regulation 98.*

The work at height Regulations recognise that work at height can be performed safely in a number of different ways, using a wide range of work equipment. The choice of equipment will depend on the risk assessment – different types of equipment will have advantages and disadvantages depending on the task and the environment in which the work is to be performed. Whatever equipment is selected should be of sound construction in suitable material, be of adequate strength and be free from obvious defects. It must also meet any specific requirements set out in the Schedules to the Regulations. General guidance on selecting work equipment is provided below.

Give collective measures priority

As well as taking account of the risk assessment in selecting the most suitable equipment, collective prevention and arrest measures, e.g. guard-rails, should take precedence over personal measures. In principle, this means that equipment such as mobile elevating work platforms (MEWPs), scaffolding and cradles should be used in preference to personal fall protection systems. It does not prohibit, however, the use of the latter type of equipment if these are the most appropriate in light of the overall plan and risk assessment, and the nature of the work to be carried out.

Choosing the right equipment for the task

The choice of equipment involves “reasonable practicability” and must comply with Regulation 98(c) to prevent a person falling or, to the extent that cannot be achieved, to mitigate the distance and consequences of such falls. Choices should be thought through. A ladder may reach the workplace but if workers need to climb it for long durations, or with heavy or bulky equipment, scaffolding is likely to be more appropriate. On the other hand, the risks of installing scaffolding should be considered, especially for work of short duration, where a MEWP might be more appropriate.

Selecting the right equipment for access and egress

Selecting equipment for access and egress will depend on the particular use envisaged. For frequent access, employers should consider more permanent arrangements. If a scaffold, for example, is to be in place for some time, the erection of a staircase with handrails would be more appropriate than a ladder tied in place, especially if bulky loads are being carried up a long flight. Employers should also consider the use of hoists or other methods if this will reduce the risks of falls.

Systems of work or means of access should be designed so that workers do not have to climb over

guard-rails. If frequent access is required it may be appropriate to use gates, which will allow access when required and also protect those working on the scaffold by providing a barrier. For work on high-rise buildings, which may take considerable periods of time to complete, the use of mast-climbing work platforms or suspended platforms may be appropriate. These should only be erected, altered, operated or dismantled by those with the necessary competence and in accordance with the manufacturer's instructions.

MEWPs should not generally be used as a means of access to or from another structure or surface – climbing out of MEWPs in these circumstances has injured several people. MEWPs may, however, be used for this purpose if they have been specifically designed for it, or as part of a properly planned operation where, in exceptional circumstances, this is the safest way to gain access to a place of work at height. In such cases, suitable fall protection should be worn and correctly anchored.

Falls below two metres

There has always been a duty to use a safe system of work and to prevent people from falling from any height. Under the Construction Regulations, all falls were required to be prevented. The method of preventing falls under two metres was to be determined by the risk, while for heights over two metres, the use of guard-rails and working platforms to prevent falls was specified.

The work at height Regulations require that the risk of a fall be prevented wherever a fall is liable to cause personal injury. This means that measures should be taken to prevent injury for any height where there is a risk of a fall causing personal injury.

The old division between low and high falls in construction applies no longer. The duty is to prevent falls. There are almost as many low-fall injuries as high-fall injuries and low falls cause many serious injuries.

The work at height Regulations require you to take a sensible risk-based approach to preventing falls. Where it is reasonably practicable to take precautions to prevent a fall, steps should be taken to do so. Examples of what you have to consider in a risk assessment include:

- using guard-rails on trestles and scaffolds for bricklayers;
- ensuring that guard-rails to scaffolds and towers are provided and not deliberately removed for work at heights of less than two metres.

However, it is essential that a sensible and pragmatic approach is taken when addressing low falls, so precautions should only be taken when the scope and duration of the work presents a risk of injury. If the risk is trivial and it is not reasonably practical to take other precautions, then no action needs to be taken apart from training and instruction.

Falls above two metres

Where the fall height is two metres or more, appropriate action must be taken to prevent falls. When selecting work equipment, the expectation is that guard-rails and working platforms will be used. These are always the preferred measures to

protect from falls unless a risk assessment clearly identifies other equipment as providing better protection given the nature and duration of the task. These Regulations do not reduce the pre-existing standards for work at height above two metres. When a working platform (e.g. scaffolds or mobile platform) is used for construction work where there is a risk of falling more than two metres, the equipment must be inspected before use and every seven days (see Regulation 119).

Ladders

Ladders, including fixed ladders and stepladders, are commonly used in most employment sectors. However, people often seriously underestimate the risks involved in using them, and falls from ladders account for many of the serious work-related injuries each year. In a typical year, two fatalities and 220 other injuries involving ladders and resulting in four or more day's absence from normal work are reported to the Health and Safety Authority. The actual number of non-fatal injuries is a multiple of this. Most of the injuries were falls from a height but other accident triggers were lifting and carrying the ladder, slipping or falling while carrying it, or the ladder itself collapsing or falling.

Ladders should only be used as work equipment, either for access and egress or as a place from which to work, where a risk assessment shows that the use of other work equipment is not justified because of the low risk and the short duration of the job or unalterable features of the work site. The risk assessment is essential and should consider not only those using the ladder but others who could be affected, such as passers-by. The safety of lone workers who use ladders, such as window cleaners, depends significantly on their correct use of the ladder and therefore the provision of adequate training is essential. Safety should not be compromised by haste to complete the job. All ladders must be used in accordance with the manufacturer's instructions.

The work at height Regulations do not ban ladders but require consideration to be given to their use. They require that ladders should only be considered where the use of other more suitable work equipment such as towers, mobile platforms, scaffolds or temporary stairs is not appropriate. Ladders, for example, are frequently used during fit-out installations, but in most cases other work equipment is more appropriate. Where ladders and stepladders are used, they should only be used as a workplace for light work that is low risk and of short duration.

In selecting the most appropriate work equipment for a particular work activity the selection process must take into account the following hierarchy of controls:

- first avoid work at height where possible;
- then prevent falls from height; and, failing that
- reduce the consequences of a fall.

Where work at height is necessary, you need to justify whether a ladder or stepladder is the most suitable access equipment compared to other access equipment options. You do this by using risk assessment and the hierarchy of controls.

When considering whether it could be appropriate to use a ladder or stepladder, you need to consider whether the activity is suitable for the use of a ladder. As a guide, only use a ladder or stepladder:

- where the work is of short duration – ladders are not suitable for work where they are in one position for 30 minutes or more;
- where the risk is low, i.e. because the nature of the work makes a fall unlikely or where there is a fall that the nature of the fall would be unlikely to cause injury;
- for “light work” – ladders are not suitable for strenuous or heavy work;

- for work that does not involve carrying heavy or awkward tools or equipment;
- where a handhold is available both for climbing the ladder and in the working position;
- where you can maintain three points of contact (hands and feet) at the working position. On a ladder where you cannot maintain a handhold, other than for a brief period of time, other measures will be needed to prevent a fall or reduce the consequences of one. On stepladders where a handhold is not practicable, a risk assessment will have to justify whether it is safe or not.

On a ladder or stepladder, **do not**:

- overload it – the person and anything they are taking up should not exceed the highest load stated on the ladder;
- over-reach – keep your belt buckle (navel) inside the stiles and both feet on the same rung throughout the task.

When working on ladders and stepladders, you should avoid work that imposes a side loading, such as side-on drilling through solid materials (e.g. bricks or concrete), by having the rungs or steps facing the work activity. Stepping on or off the top of a ladder onto another surface is high risk unless the ladder is properly secured to prevent it slipping or moving sideways. Where side-on loadings cannot be avoided, you should prevent the ladder from tipping over, for example, by tying the ladder to a suitable point. Otherwise a more suitable type of access equipment should be used.

You should avoid holding items when climbing, for example, by using tool belts:

- on a ladder where you must carry something you must have one free hand to grip the ladder;
- on a stepladder where you cannot maintain a handhold (e.g. putting a box on a shelf or drilling into a wall), the use of a stepladder will have to be justified by taking into account:
 - the height of the task;
 - a safe handhold still being available;
 - whether it is light work;
 - whether it avoids side loading;
 - whether it avoids over-reaching;
 - whether the user's feet are fully supported; and
 - whether you can tie the stepladder if it is likely to move.

If ladders are to be used to work from, and not just for access or egress, make sure that:

- a secure handhold and secure support are available at all times;
- the work can be reached without stretching;
- the ladder can be secured to prevent slipping.

When working from an A frame ladder, never straddle the ladder.

It is tempting to try to ensure that all the work is completed without having to go down the ladder and move it, but over-reaching while working from a ladder is a major cause of falls, even for experienced workers. See also guidance relating to Regulation 114 for more information on ladders.

Regulation 101: Condition of surfaces for supporting structures

101. An employer shall ensure that a surface upon which any supporting structure rests is stable, of sufficient strength and of suitable composition to support safely the supporting structure, the working platform and any loading intended to be placed on the working platform.

Any surface which is intended to support a supporting structure must be capable of carrying and dispersing the load of the structure and any load placed on the working platform.

Regulation 102: Stability of supporting structure as amended by the Safety, Health and Welfare at Work (General Application)(Amendment) Regulations 2007 (S.I. No. 732 of 2007)

102. An employer shall ensure that a supporting structure is—

- (a) suitable and of sufficient strength and rigidity for the purpose for which it is being used,*
- (b) in the case of a mobile structure, prevented by appropriate devices from moving inadvertently during work at height,*
- (c) in a case other than a mobile structure, prevented from slipping by secure attachment to the bearing surface or to another structure, by provision of an effective anti-slip device, or by other means of equivalent effectiveness,*
- (d) stable while being erected, used and dismantled, and*
- (e) when altered or modified, so altered or modified as to ensure that it remains stable.*

(as amended by the Safety, Health and Welfare at Work (General Application)(Amendment) Regulations 2007)

Supporting structures are subjected to a wide range of loading during erection, use and dismantling. A supporting structure should support its own dead load and live loads, including shock and wind loads during erection, use, alteration and dismantling. In the case of mobile structures, devices are required to prevent inadvertent movement during use.

Regulation 103: Guard-rails, toe-boards, barriers etc.

103. (1) A reference in this Regulation to a means of protection is to a guard-rail, toe-board, barrier or other similar means of protection.

(2) An employer shall ensure that a means of protection is—

- (a) of sufficient dimensions, strength and rigidity for the purposes for which it is being used and is otherwise suitable,*
- (b) so placed, secured and used as to ensure, so far as is practicable, that it does not become accidentally displaced,*

- (c) *so placed as to prevent, so far as is practicable, the fall of any employee, or any material or object from any place of work,*
 - (d) *in relation to work at height involved in construction work such that—*
 - (i) *the top guard-rail or other similar means of protection is at least 950 mm above the edge from which any employee is liable to fall,*
 - (ii) *toe-boards provided are suitable and sufficient to prevent the fall of any employee, or any material or object, from any place of work, and*
 - (iii) *any intermediate guard-rail or similar means of protection is positioned so that any gap between it and other means of protection does not exceed 470 mm.*
- (3) *An employer shall ensure that—*
- (a) *any structure or part of a structure that supports a means of protection, or to which a means of protection is attached, is of sufficient strength and suitable for the purpose of that support or attachment,*
 - (b) *subject to paragraph (2)(d), there is not a lateral opening in a means of protection other than at a point of access to a ladder or stairway where an opening is necessary,*
 - (c) *a means of protection may be removed only for the time, and to the extent necessary, to gain access or egress, or for the performance of a particular task, and is replaced as soon as practicable, and*
 - (d) *the particular task is not performed while the means of protection is removed, unless effective compensatory safety measures are in place.*

Guard-rails may be required to make a work platform or other place of work safe by preventing falls. The criteria set out in Regulation 103 applies to all guard-rails, whether permanent structures or work equipment, and the principles that lie behind the criteria are that whenever a person is working at height in a place that is protected by guard-rails, the rails should not allow the person to fall over, under or between them. To the extent that any permanent rails do not prevent this from happening, there will need to be temporary measures, such as the erection of scaffolding, to ensure that falls are prevented. The Regulations set the minimum height for guard-rails for construction work to be at least 950 mm. The Regulations also require an intermediate guard-rail to be provided. The gap between the top rail and intermediate rail, and also the gap between the intermediate rail and the toe-board, must not exceed 470 mm. The height of the toe-board should be at least 150 mm.

For permanent structures or other platforms where there are relevant recognised Irish or European Standards, these should be complied with. In the absence of such standards the requirements specified for construction work should be used as a guide.

See Health and Safety Executive (UK) publication, *Health and Safety in Construction HSG 150*, for further information on guard-rails (and working platforms) in construction.

See also EN12811 – 1:2003 *Temporary Works Equipment – Part 1: Scaffolds – Performance Requirements and General Design for Guard-Rails on Scaffolds*.

See EN ISO 14122-3:2001 *Safety of Machinery – Permanent Means of Access to Machinery – Part 3: Stairways, Stepladders and Guard-Rails* for further information on guard-rails around machinery. See the Health and Safety Authority's *Code of Practice for Access and Working Scaffolds* for further information on the design, erection and dismantling of scaffolds used in construction.

It may be necessary, in certain circumstances, to remove guard-rails, fencing and other means of protection for short periods. Regulation 103(3)(c) and (d) make it clear that this may only occur:

- to the time and extent necessary for the job, before the barrier is replaced; and
- such that guards are not removed while workers are at height unless there is some other safeguard, e.g. a safety net.

Measures to protect workers while the task is carried out could include safe systems of work (or permit-to-work systems where appropriate) including the provision of a fall protection system, limiting access to specified people and ensuring that those performing the task are provided with adequate information, training and supervision.

If regular access or egress is required, it may be more appropriate to provide gates on scaffolds. In all cases, the gap in the protection should be minimised and the gate closed immediately after the operation has finished.

Regulation 104: Stability of working platforms

104. *An employer shall ensure that a working platform is—*

- suitable and of sufficient strength and rigidity for the purpose for which it is intended to be used or is being used,*
- so erected and used as to ensure that its components do not become accidentally displaced so as to endanger any employee,*
- when altered or modified, so altered or modified as to ensure that it remains stable,*
- where it has moving parts, prevented by appropriate devices from moving inadvertently during work at height, and*
- dismantled in such a way as to prevent accidental displacement.*

Regulation 105: Safety on working platforms

105. *An employer shall ensure that a working platform—*

- is of sufficient dimensions to permit the safe passage of employees and the safe use of any plant or materials required to be used, and provides a safe working area, having regard to the work being carried out there,*
- possesses a suitable surface and, in particular, is so constructed that the surface of the working platform has no gap—*
 - through which an employee could fall,*
 - through which any material or object could fall and injure an employee, or*
 - giving rise to other risk of injury to any employee, unless measures have been taken to ensure that no employee could be so injured, and*
- is so erected and used, and maintained in such condition, as to prevent, so far as is reasonably practicable—*
 - the risk of slipping or tripping, or*

- (ii) *any employee being caught between the working platform and any adjacent structure.*

Regulation 106: Loading of working platform and supporting structures

106. *An employer shall ensure that a working platform or a supporting structure is not so loaded as to give rise to a risk of collapse or to any deformation that could affect its safe use.*

Stability, safety and loading of working platforms and supporting structures

Working platforms are defined in Regulation 94 as “any platform used as a place of work or as a means of access to or egress from a place of work...”. In considering whether a platform is suitable for work at height, employers need to ensure that it is:

- of sufficient dimensions to allow safe passage and safe use of equipment and materials;
- free of hazards that could cause trips, or allow people’s feet to pass through the flooring;
- constructed to prevent feet and objects passing over the edge, i.e. toe-boards or edge protection are in place;
- kept clean and tidy, e.g. do not allow mud and debris to build up on platforms;
- secure; and
- capable of carrying the load.

“Sufficient dimensions to allow safe passage” means that runs, ramps, walkways and other “platforms” of this type should be wide enough to allow a person at shoulder width to pass along them easily. This width would normally be considered to be at least 600 mm although there are circumstances in which a narrower platform may have safety advantages, such as towers on stairs being used for light work, or other situations where wider boards would be more difficult to use at height because of their weight. Platforms should be wider than 600 mm if they are used for storage as well as access.

Mobile elevating work platforms (MEWPs)

MEWPs may provide a safe means of working at height if used properly in accordance with the manufacturer’s instructions. Employers and others responsible for the use of MEWPs should assess the risks of users falling from or being thrown from the basket and take precautions to eliminate or control those risks.

The precautions for safe work from a MEWP include:

- a guard-rail and a mid-rail round the edge of the basket to stop the user falling;
- a slip-resistant floor;
- toe-boards round the edge of the platform;

- deadman controls clearly marked to show their method of operation;
- use of stability devices, e.g. outriggers, provided to make the machine stable, which are interlocked such that the MEWP will not operate unless they are fully extended; and
- locking-out controls (other than those in the basket) to prevent inadvertent operation.

A safe system of work should be in place that includes:

- making sure that the MEWP selected is suitable for the task;
- consideration of access to and exit from where the work is being carried out;
- planning the job to address the risks from overhead hazards and passing traffic, including precautions to prevent collision;
- use of trained/experienced operator(s);
- use of harnesses;
- instructions to the workers about safety issues; and
- instructions in emergency procedures, such as evacuation, should power be lost.

MEWPs are also lifting equipment for lifting people. Employers should therefore ensure that an MEWP has a thorough examination by a competent person at least every six months or, where applicable, in accordance with an examination scheme drawn up by a competent person. Employers should also ensure that routine maintenance is performed in accordance with the manufacturer's instructions and advice from a competent person.

In addition to purpose-built access equipment such as MEWPs, access to work at height may also be achieved by the use of working platforms fitted to counterbalanced fork-lift trucks (FLT), very narrow aisle trucks and/or telehandlers. There are two types of working platform – non-integrated working platforms and integrated working platforms. Integrated working platforms contain controls within the platform that are integrated into the controls of the truck/telehandler. The non-integrated platforms do not have such controls within the platform.

Fork-lift trucks are not specifically designed to carry people. This means that the use of a working platform on an FLT is restricted to exceptional use only. Trucks or telehandlers fitted with integrated working platforms which have been designed to carry people may be used for routine access to work at height. The design must relate to the combination of the truck/telehandler and the working platform, not simply to the working platform in isolation.

For more information on working platforms for use on fork-lift trucks and telehandlers, see Health and Safety Executive (UK) publication, Guidance Note PM 28 (3rd edition, December 2005), *Working Platforms on (non-integrated) Forklift Trucks*.

Regulation 107: Scaffolding, additional requirements

107. *An employer shall ensure that—*

- (a) *every scaffold and every part of it is of good design and construction, composed of suitable and sound material and is of adequate strength for the purpose for which it is used or intended to be used,*
- (b) *strength and stability calculations for scaffolding are carried out unless—*
 - (i) *a record of the calculations covering the structural arrangements contemplated is available, or*

- (ii) *it is assembled in conformity with a generally recognised standard configuration,*
- (c) *depending on the complexity of the scaffolding selected, an assembly, use and dismantling plan is drawn up by a competent person, which plan may be in the form of a standard plan supplemented by information on the scaffolding in question,*
- (d) *a copy of the plan referred to in paragraph (c), including any instructions it may contain, is kept available for the use of persons concerned in the assembly, use, dismantling or alteration of scaffolding until it has been dismantled,*
- (e) *the dimensions, form and layout of scaffolding decks are appropriate to the nature of the work to be performed, suitable for the loads to be carried and permit work and passage in safety,*
- (f) *while a scaffold is not available for use, including during its assembly, dismantling or alteration, it is marked with warning signs in accordance with the requirements of Part 7, Chapter 1 and, where appropriate, is protected by barriers or other suitable means from unauthorised access or use, and*
- (g) *any scaffolding assembled, dismantled or significantly altered is only carried out under the supervision of a competent person and by persons who have received appropriate and specific training in the operations envisaged that addresses specific risks that the operations may entail and precautions to be taken, and, in particular—*
 - (i) *in understanding the plan referred to in paragraph (c) for the assembly, dismantling or alteration of the scaffolding concerned,*
 - (ii) *the need for safety during the assembly, dismantling or alteration of the scaffolding concerned,*
 - (iii) *measures to prevent the risk of persons, materials or objects falling,*
 - (iv) *safety measures in the event of changing weather conditions that could adversely affect the safety of the scaffolding concerned,*
 - (v) *permissible loadings, and*
 - (vi) *any other risks that the assembly, dismantling or alteration of the scaffolding concerned may entail.*

Regulation 107 covers specific requirements for scaffolds. Scaffolds should be designed, erected, altered and dismantled by competent people. A competent person should also supervise the work. System scaffolds should be installed in accordance with the manufacturer's instructions.

Those erecting or dismantling scaffolding should be trained in accordance with the FÁS-approved Construction Skills Certification Scheme (CSCS) as required under the Safety, Health and Welfare at Work (Construction) Regulations.

Scaffolds must be based on a stable foundation that is firm and level in order to support the loads to be placed upon them. If necessary, extra support should be provided. If the scaffolding needs to take heavy-duty loads, proper consideration will be needed to make sure it is designed and erected to a suitable specification.

Workers erecting any scaffold must look out for voids such as basements or drains, or patches of soft ground, which could give way when loads are placed upon them.

This should be considered regardless of loading. Scaffolds should be correctly braced and tied onto a permanent structure or otherwise stabilised.

If a tie is removed to allow work to proceed, an equivalent tie should be provided nearby to maintain stability. This work must be undertaken under the supervision of a competent person. The Construction Regulations place duties on clients, designers and project supervisors to eliminate or reduce the risks to workers during the construction phase. As part of this duty they should take reasonable steps to ensure that suitable anchorage points are provided within the building or structure.

“Depending on the complexity of the scaffolding selected” means that plans are needed for special or unusual designs where structural members could be overloaded or the scaffolding could become unstable if not reinforced or erected in a particular way.

Most scaffolds can be erected following a generally recognised standard configuration, such as those given in the National Access and Scaffolding Contractors (NASC) guide to EN 12811 or in British Standard BS 5973, or used in accordance with the manufacturer’s guidance for system scaffolds.

Where scaffolds, due to their complexity or size, cannot be erected to these established configurations they should be designed according to the principals given in EN 12811, BS 5973 or based on fundamental engineering principals. In these cases a note of the design should be available. Competent scaffolders should always erect tube and fitting or system scaffolds and a safe system of work should be followed, for example as described in NASC’s guidance note SG4.

Tower scaffolds can provide quick, easy and safe access. However, like any scaffold they should be erected, used, maintained and dismantled in accordance with the manufacturer’s instructions. Employers hiring a tower scaffold should ensure that they are provided with the manufacturer’s manual or instructions. Tower scaffolds must be secure when in use so that any wheels should be locked and stabilisers should be in place. In certain circumstances, for example if over the manufacturer’s recommended base to height ratio or if being used to carry out grit blasting or water jetting, they will also need to be tied to the structure.

While moving a tower scaffold ensure that no one is on it, beware of any overhead obstructions or power lines, check there are no unsecured tools on the platform and ensure that there are no depressions or holes in the floor surface.

Further guidance on tower scaffolds is contained in the Health and Safety Executive (UK) publication, *Tower Scaffolds’ Construction Information Sheet (CIS 10) revised*.

Regulation 108: Collective safeguards for arresting falls

108. (1) *Any reference in this Regulation to a safeguard is to a collective safeguard for arresting falls.*
- (2) *An employer shall ensure that—*
- (a) *a safeguard may be used only if—*
 - (i) *the risk assessment has demonstrated that the work activity can, so far as is reasonably practicable, be performed safely while using it and without affecting its effectiveness,*
 - (ii) *the use of other, safer work equipment is not practicable, and*
 - (iii) *a sufficient number of persons are available, if required, to assist with any aspect of the safeguard’s operation and have received adequate training specific to the safeguard, including rescue procedures,*

- (b) *a safeguard is suitable and of sufficient strength to arrest safely the fall of any employee who is liable to fall,*
- (c) *a safeguard—*
 - (i) *in the case of a safeguard that is designed to be attached—*
 - (I) *is securely attached to all the required anchors, and*
 - (II) *has anchors, and the means of attachment thereto, that are suitable and of sufficient strength and stability for the purpose of safely supporting the foreseeable loading in arresting any fall or during any subsequent rescue,*
 - (ii) *in the case of an airbag, landing mat or other similar safeguard, is stable, and*
 - (iii) *in the case of a safeguard that expands when arresting a fall, affords sufficient clearance, and*
- (d) *suitable and sufficient steps are taken to ensure, so far as is practicable, that in the event of a fall by any employee, the safeguard itself does not cause injury to that employee.*

Collective safeguards for arresting falls include nets, mats and inflated devices that are designed to catch a falling person. They may be anchored to prevent movement, but the manufacturer's instructions will need to be followed. If there are gaps in the supports for collective safeguards which could compromise safety, these should be filled or covered. Specific consideration should be given before the work starts to rescue procedures which may need to be carried out and to the effects of landing. Where a collective safeguard is designed to be suspended and requires a clear zone in which to deflect, that zone should be kept clear of obstructions to allow the safeguard to operate properly, i.e. so that a falling person would not come into contact with anything else if and when the safeguard is used.

Where the design of a collective safeguard requires an external power source (such as a pump for an air bag) or restraints (such as brickwork enclosing bags) to make it effective, these power sources or restraints must be sufficient to maintain the effectiveness of the equipment in the event of a fall and rescue.

Regulation 109: Personal fall protection systems

109. *An employer shall ensure that—*
- (a) *a personal fall protection system is only used by an employee if—*
 - (i) *the risk assessment has demonstrated that—*
 - (I) *the work can, so far as is reasonably practicable, be performed safely while using that system, and*
 - (II) *the use of other, safer work equipment is not practicable, and*
 - (ii) *the user and a sufficient number of persons are available, if required, to assist with any aspect of the operations envisaged and have received adequate training specific to the operations envisaged, including immediate rescue procedures,*
 - (b) *a personal fall protection system is suitable and of sufficient strength for the purposes for which it is being used, having regard to the work being carried out and any foreseeable loading,*
 - (c) *where appropriate, a personal fall protection system—*

- (i) fits the employee,*
- (ii) is correctly fitted,*
- (iii) is adjustable to minimise injury to the user if a fall occurs, and*
- (iv) is so designed, installed and used as to prevent unplanned or uncontrolled movement of the user,*
- (d) where designed for use with an anchor, a personal fall protection system is securely attached to at least one anchor, and each anchor and the means of attachment thereto is suitable and of sufficient strength and stability for the purpose of supporting any foreseeable loading,*
- (e) suitable and sufficient steps are taken to prevent any employee falling or slipping from a personal fall protection system, and*
- (f) suitable and sufficient steps are taken to ensure, so far as is practicable, that in the event of a fall by any employee, an injury from the personal fall protection system is minimised.*

Personal fall protection systems are defined in Regulation 94(1) as “(a) a fall prevention, work restraint, work positioning, fall arrest or rescue system, other than a system in which the only safeguards are collective safeguards, or (b) rope access and positioning techniques”. The requirements in Regulation 109 apply to all rope-based activities for work at height when carried out as a work activity. Most equipment for personal fall protection systems should have appropriate CE marking, normally in accordance with the European Communities (Personal Protective Equipment) Regulations. There are three categories of personal protective equipment (PPE) – most fall protection equipment is classed as PPE category III, “equipment for mortal danger”, e.g. harnesses.

CE marking does not necessarily mean that a piece of equipment is safe for the task. Check the manufacturer’s instructions to consider, for example, whether the particular piece of equipment is compatible with others being used – this is equally important if workers have requested to use their own safety equipment. Some equipment may have a lifespan date given by the manufacturer and generally should be disposed of after this date.

All equipment used in the personal fall protection system should be strong enough to withstand any forces placed upon it and should include an adequate margin for safety above those forces.

Check the equipment’s safe working loads, working load limits or maximum (and sometimes minimum) rated loads. It is usual with much personal fall protection equipment to be supplied quoting a minimum static strength, rather than safe working loads. Check too that any accessories or other equipment meets those requirements.

Employees performing rope access work should be properly clothed. Employers should consider:

- avoiding clothing with loose flaps that may become caught in any moving equipment;
- suitable footwear to give protection and a good grip;
- weather conditions, e.g. provision of gloves in the cold and sun block in hot conditions; and
- provision of appropriate personal protective equipment such as head protection (for personal fall protection systems these should always have chin-straps that prevent the hat from falling off during use).

Depending on the assessment of the risk, where work will take place for a reasonable time in one position, rope access workers should be provided with a seat for comfort. A seat may not necessarily be a boatswain’s chair. In work situations where support additional to that provided by the harness

would be beneficial, a simple support board or strap may be sufficient and be more appropriate and less risky to handle than a bulky boatswain's chair. Consideration should also be given to rest periods.

The need for rapid and effective rescue is particularly important when using personal protective systems as a delay might have severe consequences, e.g. when someone is left hanging motionless in a harness after a fall. In a worst-case scenario, loss of consciousness followed by death could occur in a few minutes. This phenomenon, known as suspension trauma, is caused by a number of factors, but is principally due to the disturbance of blood flow to the vital organs, especially the brain but also the heart and kidneys, which is an effect of hanging motionless, and possibly of the restriction of blood flow to the limbs by the harness. It can be exacerbated by other factors such as shock or injury caused by the fall itself. The time before loss of consciousness depends both on the severity and the combination of these factors and can vary from about six minutes to two hours.

Regulation 110: Work positioning systems

110. *An employer shall ensure that—*
- (a) *a work positioning system is used only if—*
 - (i) *the system includes a suitable backup system for preventing or arresting a fall, and*
 - (ii) *where the system includes a line as a backup system, the user is connected to it, and*
 - (b) *if not practicable to comply with paragraph (a), all reasonably practicable measures are taken to ensure that the work positioning system does not fail.*

A work positioning system is a personal fall protection system that enables a user to work while supported in tension or suspension in such a way that a fall is prevented or restricted. An example would be a boatswain's chair.

Regulation 111: Rope access or positioning technique

111. *An employer shall ensure that—*
- (a) *a rope access or positioning technique is used only if—*
 - (i) *it involves a system comprised of at least two separately anchored lines, of which one (known in this Regulation as “the working line”) is used as a means of access, egress and support, and the other is the safety line,*
 - (ii) *the user is provided with a suitable harness and is connected by it to the working line and the safety line,*
 - (iii) *the working line is equipped with safe means of ascent and descent and has a self-locking system to prevent the user falling should he or she lose control of his or her movements, and*
 - (iv) *the safety line is equipped with a mobile fall protection system that is connected to, and travels with, the user of the system,*

- (b) provision is made for a seat with appropriate accessories depending, in particular, on the duration of the job and the ergonomic constraints, and
- (c) the system referred to in paragraph (a)(i) does not comprise a single line, except where—
 - (i) the risk assessment has demonstrated that the use of a second line would entail higher risk to employees, and
 - (ii) appropriate measures have been taken to ensure safety.

Rope access and positioning techniques is a personal fall protection system that specifically uses two static (i.e. non-moving relative to the anchor) separately secured sub-systems. One of these sub-systems is the means of support and the other is a safety backup for getting to and from the place of work and which can be used for work positioning systems. Fundamental to this is the concept of the static rope. The user moves up and down the rope rather than the rope moving with the user. If the rope moves with the user, it is not rope access but work positioning.

Double rope working

To operate safely, rope access systems should comprise two separately anchored secure systems: the working line and the backup safety line. This principle should apply except where a risk assessment demonstrates that the use of two ropes would be more hazardous than a single rope (see commentary on single rope working below). The safety line provides the protection against a fall should the working line fail. The worker must be provided with, and use, a harness which conforms to an appropriate standard, e.g. EN 361 for full body harnesses and EN 813 for seat harnesses. The harness should be attached to both the working and safety lines. It is important that the safety line is strong enough to withstand any forces placed upon it in the event of it coming into use.

The working line must also be equipped with a device or system to stop or slow an uncontrolled descent if a worker loses control. Similar devices to arrest the fall of a worker must also be in place on the safety line. In all rope access work there should be a minimum of two workers, one of whom is competent to supervise. Contingency plans should be in place in the event of a rescue being required, especially in circumstances where someone is left hanging motionless, as discussed above in guidance for Regulation 109. An effective communication system should be in place between all workers and, where necessary, third parties (e.g. a control room if working offshore). This system should ensure that all those involved in the task are visible to one another and in audible range. Where this is not possible or suitable, an alternative safeguard, such as an extra banksman or a radio system, should be in place, in accordance with the risk assessment.

Single rope working

Regulation 111(c) states that single rope working is permitted where use of another line would entail higher risk and where appropriate measures have been taken to ensure safety. This might apply, for example, to personnel “flying” in a theatre, where use of a second line might risk entanglement, and where other measures to ensure safety are in place.

Further information is contained in BS 7985:2002, *Code of Practice for the Use of Rope Access Methods for Industrial Purposes*, which gives guidance for those who commission or use rope access methods. It is appropriate where ropes are used as the primary means of access, egress or support. The standard is not applicable to the use of ropes in arboriculture, steeplejacks or use by the emergency services. Guidance is also contained in the Industrial Rope Access Trade Association’s (IRATA) *Guidelines on the Use of Rope Access Methods for Industrial Purposes*.

Regulation 112: Fall arrest systems

112. *An employer shall ensure that—*
- (a) *a fall arrest system incorporates means of absorbing energy and limiting the force applied to the user's body, and*
 - (b) *a fall arrest system is not used in a manner that—*
 - (i) *involves the risk of a line being cut,*
 - (ii) *where its safe use requires a clear zone (allowing for any pendulum effect), does not afford such zone, or*
 - (iii) *otherwise inhibits its performance or renders its use unsafe.*

A fall arrest system is a personal fall protection system by which a fall is arrested to prevent the collision of the user with the ground or structure. An example would be the traditional harness plus lanyard incorporating energy absorbance.

Regulation 113: Work restraint systems

113. *An employer shall ensure that a work restraint system is only used if it is—*
- (a) *designed so that, if used correctly, it prevents the user from getting into a position in which a fall can occur; and*
 - (b) *used correctly.*

A work restraint system is a specific form of personal fall prevention system by which a person is prevented from reaching zones where the risk of a fall exists. An example would be a harness and lanyard or rope system adjusted so that it prevents the user from getting to the edge of a roof.

Regulation 114: Ladders

114. *An employer shall ensure that—*
- (a) *a ladder is used for work at height only if the risk assessment has demonstrated that the use of more suitable work equipment is not justified because—*
 - (i) *the level of risk is low, and*
 - (ii) *the duration of use is short, or*
 - (iii) *existing features at the place of work cannot be altered,*
 - (b) *any surface upon which a ladder rests is stable, firm, of sufficient strength and of suitable composition to support safely the ladder, so that the ladder's rungs or steps and any loading intended to be placed on it remain horizontal,*
 - (c) *a ladder is so positioned as to ensure its stability during use,*
 - (d) *a suspended ladder is attached in a secure manner so that, with the exception of a flexible ladder, it cannot be displaced and swinging is prevented,*
 - (e) *a portable ladder is prevented from slipping during use by—*
 - (i) *securing the stiles at or near their upper or lower ends,*
 - (ii) *effective anti-slip or other effective stability devices, or*
 - (iii) *any other arrangement of equivalent effectiveness,*

- (f) a ladder used for access is long enough to protrude sufficiently above the place of landing to which it provides access, unless other measures have been taken to ensure a firm handhold,*
- (g) no interlocking or extension ladder is used unless its sections are prevented from moving relative to each other while in use,*
- (h) a mobile ladder is prevented from moving before it is used,*
- (i) where a ladder, or run of ladders, rises a vertical distance of 9 m or more above its base, sufficient safe landing areas or rest platforms are provided at suitable intervals, where reasonably practicable, and*
- (j) a ladder is used in such a way that—*
 - (i) a secure handhold and secure support are always available to the employee, and*
 - (ii) the employee can maintain a safe handhold when carrying a load unless, in the case of a stepladder, the maintenance of a handhold is not practicable when a load is carried, and the risk assessment has demonstrated that the use of a stepladder is justified because—*
 - (I) the level of risk is low, and*
 - (II) the duration of use is short.*

There are many types and sizes of ladders including portable, suspended, step, interlocking, extension, mobile and fixed ladders. They all, regardless of their use, need to meet the requirements of the work at height Regulations. This would include, for example, a portable ladder that is tied in place for many months for access to an office on a building site. They should be strong enough to take the loads placed upon them. New ladders are marked in accordance with their conditions and class of use. Anyone using a ladder or stepladder for industrial work should ensure that it is marked in accordance with Irish, European or other appropriate standards, such as:

- EN 131 -1 and EN 131-2 Ladders;
- Timber BS 1129: 1990 Kite-marked Class 1 Industrial;
- Aluminium BS 2037: 1994 Kite-marked Class 1 Industrial; and
- Glass Fibre BS EN 131: 1993 Kite-marked Industrial.

All duty-holders considering using a ladder to perform work at height, or as a means of access or egress, should carry out a risk assessment. The assessment should be proportionate to the risks involved. For example, a generic assessment may be quite suitable for simple, routine or repetitive tasks, but more complex work will need specific planning. Doing a written assessment will ensure that the risks are recorded. A risk assessment should cover factors such as the height to be negotiated, the site conditions (including weather), the duration and extent of the work and the frequency of access etc. It is important to remember that:

- ladders should only be used as a place to work when other, potentially safer, means such as tower scaffolds are not reasonably practicable; and
- ladders should only be used for access when putting in a staircase is not reasonably practicable.

In addition to the above, when considering whether it could be appropriate to use a ladder or stepladder it is also important to establish that:

- the work is of short duration; and
- the work is low risk, e.g. light work – ladders are not suitable for strenuous or heavy work.

Many falls from ladders occur because the ladder moves unexpectedly during use. This is very often caused by the user over-stretching or the feet of the ladder slipping due to inadequate grip.

Maintenance issues such as ensuring that it is free from mud or paint and that the feet are still providing effective grip are vitally important. Research has indicated that the feet of a ladder are particularly susceptible to damage that can significantly reduce the grip, make them more vulnerable to movement and, as a result, increase the potential for falls.

Portable ladders (not stepladders) should always be placed at the correct angle, which is around 75 degrees or roughly one metre out for every four metres up.

Portable ladders should be prevented from slipping during use, for example by:

- tying the stiles effectively to an existing structure – securing them at the top is the best method; securing at the bottom or middle is not very effective to prevent sideways slip, unless it is done properly with equipment designed for the purpose;
- using an appropriate ladder stabiliser or anti-slip devices; and
- having another worker “foot” the ladder (this is where someone stands on the bottom rung, and is only suitable when it is not practicable to secure the ladder in another way, as it is not very effective).

As well as being properly maintained, regular visual checks should be made for damage such as cracked or bent stiles or rungs, corrosion and defective or missing fittings. The surface on or against which a ladder is placed must be strong enough to support any loads placed upon it. Plastic gutters and glass, for example, are unlikely to be able to support the weight of a ladder and worker. The surfaces onto which ladders are leant must be flat unless special provision is made, such as the use of a levelling device. Weather and other factors will affect the surface, e.g. ice, rain and wet leaves will reduce the friction of the surface. Where a worker needs to gain access to a platform, the stiles of the ladder should protrude sufficiently to enable a safe handhold and, if necessary, have a handhold when working at the higher level. Even a stepladder should not be positioned where there is access to a doorway or where passing traffic is likely to strike it.

As well as the physical strength of the ladder, certain environments require additional thought. Ladders should not be used within six horizontal metres of overhead power lines unless they have been made dead or protected by insulation. Where it is essential that work be performed, workers in the vicinity of electrical circuitry should be using nonconductive access equipment, e.g. made of glass fibre. However, if the electricity is isolated, workers on an aluminium tower scaffold will get far greater protection from falling than from being on a ladder. In “sterile” industries such as the manufacture of food, computer circuit boards or health products, glass fibre is the preferred material for access equipment. In the chemical and oil industries, 100% glass fibre ladders are suitable where the access equipment needs to be “spark free” as well as non-conductive.

It is important that the ladder is not only standing on a firm level surface, but also that the rungs remain horizontal whilst in use. There are a number of devices that now help solve this problem and allow for safer working on uneven ground or sloping surfaces. However, they should be carefully selected and used as directed by the manufacturer.

Other factors that can improve the safe use of ladders include facing the ladder at all times when climbing or dismounting and maintaining contact with both feet and at least one hand.

“A secure handhold should be available” means that the user can grasp an upper rung or handrail on the ladder or stepladder (if, as recommended, the user is not working from the topmost two or three rungs or steps this should be possible). It does not mean that the user is expected to be holding the rung or handrail at all times as this would clearly make it impossible to carry out many tasks for which two hands are needed. Where two hands are needed to perform work on a ladder, other protective measures, such as fall arrest or restraint systems, should be used to prevent or arrest a fall. In the case of a stepladder, provision is made for the carrying of a load, which makes it impracticable to maintain a handhold, provided that:

- a proper risk assessment has been carried out; and
- the risk assessment demonstrates that the use of other potentially safer equipment is not practicable because of the low level of risk and the short duration of use.

Also in the case of a stepladder, consideration should be given to, for example, its suitability for the site conditions and the task (e.g. is it of short duration and light duty?). Other factors to consider would be the height of the task, whether the user can balance properly, whether the stepladder can be positioned close to the task to avoid over-reaching, whether the task does not involve side loading that could cause the stepladder to fall over, and if it is sited on firm, level ground.

Over-reaching while working from a ladder is a major cause of falls. Always go down and move the ladder rather than be tempted to over-reach. Stepladders can be used sideways, but not for any work that puts a side loading on them of any significance. When it becomes significant depends on the height and the floor type. As a rule of thumb, cable pulling, drilling and sawing should not be undertaken sideways, but inspection work, painting and operating switches may be done with the stepladder sideways. There should never be more than one person on a stepladder and he or she should never try to stand or rest a foot on the top handrails to gain extra height.

When the job is done, a portable wooden ladder needs to be protected from the weather in a covered, ventilated area. A ladder should not be hung by one of its rungs, as this could weaken it.

Fixed ladders should not be provided in circumstances where it would be practical to install a staircase.

Regulation 115: Fragile surfaces

115. *An employer shall—*

- (a) *ensure that no employee passes across or near, or works on, from or near, a fragile surface, where work can be carried out safely and under appropriate ergonomic conditions without his or her doing so,*
- (b) *where it is necessary to pass across or near, or work on, from or near a fragile surface—*
 - (i) *ensure, so far as is reasonably practicable, that suitable and sufficient platforms, coverings, guard-rails or other similar means of support or protection are provided and used so that any foreseeable loading is supported by such supports or borne by such protection, and*
 - (ii) *where a risk of an employee falling remains despite the measures taken under this Regulation, take suitable and sufficient measures to minimise the distance of a potential fall and the risk of personal injury, and*

- (c) *where an employee may pass across or near, or work on, from or near a fragile surface, ensure that—*
- (i) *prominent warning notices are affixed at the approach to the place where the fragile surface is situated, or*
 - (ii) *where that is not practicable, such employee is made aware of it by other means.*

Regulation 115 requires employers to manage the risks from fragile surfaces. This applies to surfaces where there is a risk of a person or object falling through including, for example, fragile roofs, ceilings and skylights. These surfaces may be either close to or part of the structure on which work is to be done and will include vertical or inclined surfaces.

Any surface from which work at height is carried out must be strong and stable enough so that any foreseeable loads placed on it will not lead to its collapse. Duty-holders should consider whether work on a fragile surface could be done in a way which does not expose workers to risk by having to stand on or near the surface, e.g. can the work be done from below? Duty-holders should consider the whole installation, including the fixings of the surface material. Remember that while the surface may support a person's weight, it may prove fragile once the weight of a load being carried is taken into account. It is also vital to consider the dynamic forces of the person falling from height onto the surface and the effect of ageing on the surface material and the deterioration caused by weather, environment, impact and any structural alterations.

Roof lights in non-fragile roofs may be difficult to see – they may have been painted over and in bright sunshine they can blend in with the surrounding sheets. Remember that fragile surfaces can also be vertical, or nearly so, as well as horizontal. For example, some, mainly older, skylights may have large vertical glass sections which people can fall through.

If the work requires regular or occasional access where there is a fragile surface, permanent fencing, guards or other measures to prevent falls should be in place. Where a risk of falls remains, fall arrest equipment is required, so far as is practicable.

Regulation 116: Falling objects

116. *An employer shall—*
- (a) *take suitable and sufficient steps to prevent, so far as is reasonably practicable, the fall of any material or object where necessary to prevent injury to any employee,*
 - (b) *where it is not practicable to prevent the fall of any material or object as referred to in paragraph (a), take suitable and sufficient steps to prevent any person being struck by any falling material or object that is liable to cause injury,*
 - (c) *ensure that no material or object is thrown or tipped from height in circumstances where it is liable to cause injury to any person, and*

- (d) *ensure that materials and objects are stored in such a way as to prevent risk to any employee arising from the collapse, overturning or unintended movement of the materials or objects.*

Regulation 116 requires that if a falling object could injure someone, steps be taken to ensure that this is prevented. The effectiveness of any measures will depend on the material and tools that are being used and the effect that weather, wind or other factors may have in creating a more widespread hazard. The risk of falling materials causing injury should be minimised by keeping workplaces at height clear of loose materials and stacking or storing materials well back from edges. Sheets of plywood, insulation and decking should be secured to prevent them from being blown over edges. Ways of preventing objects rolling or being kicked off the edge might include toe-boards or solid barriers, or attaching them to people or fixed structures. Any guards used (including brick guards) must be robust and usually require a mid-rail. Tools or personal items, such as mobile phones, can cause injury if they hit someone. High visibility netting may be one way of dealing with this risk; another might be to ensure personal items or other equipment not necessary for the task are left in a safe place before working at height.

Rubbish chutes used to dispose of materials from height need to be properly managed so that the debris does not hit anyone either as it goes down the structure or when it hits the skip or pile at the bottom. It is also important to impress on workers the risk of injury to people by using hoists, other ropes or hand-to-hand methods to move work equipment or other goods such as scaffold clips. Loads and equipment need to be stored correctly so they do not collapse or fall at any time and cause injury. The logistics of storing material on work surfaces may need to be reviewed so that the workers can access smaller amounts kept at a height and that surpluses are stored on the ground. These issues require special thought in relation to the duty of any person under an employer's control.

Regulation 117: Danger areas

117. *An employer shall ensure, without prejudice to the preceding requirements of this Part, that, where a place of work contains an area in which, owing to the nature of the work, there is a risk of any employee suffering personal injury by—*
- (a) falling a distance, or*
 - (b) being struck by a falling object,*
- the place of work, so far as is practicable, is equipped with devices preventing unauthorised employees from entering the area and that the area is clearly indicated by warning signs or other appropriate means.*

Regulation 117 requires that where workers are adjacent to an area where there is a danger of falling (e.g. near fragile surfaces) or being struck by an object, the employer needs to make sure, so far as practicable, that people whose presence is not necessary are prevented from entering the area. It also requires that clear indication of this area is given, for example through notices. This will alert those who may need to access the site to recover objects or carry out maintenance work to take suitable precautions, such as attaching themselves to fall protection systems or wearing head protection.

Regulation 118: Interpretation for Regulation 119

118. (1) *Subject to paragraph (2), in this Regulation and Regulation 119, “inspection” means such visual or more rigorous inspection by a competent person as is appropriate for safety purposes and includes any testing appropriate for those purposes.*

- (2) *Where a thorough examination has been made of lifting equipment under a specific requirement of any of the relevant statutory provisions—*
- (a) *the examination, for the purposes of Regulation 119, other than paragraph (1)(c) of that Regulation, shall be treated as an inspection of the lifting equipment, and*
 - (b) *where a report of the examination has been prepared under the relevant statutory provisions, the report shall be treated for the purposes of Regulation 119(4)(b) as the recording of the inspection.*

Regulation 119: Inspection of work equipment

119. (1) *An employer shall ensure that, as regards work equipment to which Regulations 101 to 114 apply—*
- (a) *where the safety of the work equipment depends on how it is installed or assembled, it is not used after installation or assembly in any position unless it has been inspected in that position,*
 - (b) *without prejudice to paragraphs (a) and (c), work equipment exposed to conditions causing deterioration which is liable to result in dangerous situations is inspected—*
 - (i) *at suitable intervals, and*
 - (ii) *where exceptional circumstances have occurred that are liable to jeopardise the safety of the work equipment, as soon as practicable following these exceptional circumstances, and*
 - (c) *without prejudice to paragraph (a), a working platform—*
 - (i) *used for construction work, and*
 - (ii) *from which an employee could fall 2 m or more, is not used in any position unless it has been inspected in that position within the previous 7 days or, in the case of a mobile working platform, inspected on the site, within the previous 7 days.*
- (2) *A person carrying out an inspection of work equipment to which paragraph (1) (c) applies shall—*
- (a) *promptly prepare a report containing the particulars as set out in Schedule 5, and*
 - (b) *within 24 hours of completing the inspection, provide the report, or a copy thereof, to the person on whose behalf the inspection was carried out.*
- (3) *An employer receiving a report under paragraph (2) shall keep the report or a copy of the report—*
- (a) *at the site where the inspection was carried out until the construction work is completed, and*
 - (b) *thereafter, at an office of the employer.*
- (4) *An employer shall ensure that—*
- (a) *no work equipment under the employer's control is used in another place of work unless it is accompanied by evidence that the last inspection required to be carried out under this Regulation has been carried out, and*
 - (b) *the result of an inspection under this Regulation is recorded and kept available for inspection by an inspector for 5 years from the date of inspection.*

Inspection of work equipment

Regulation 119 sets down the requirements for the inspection of equipment used for work at height. Where the safety of the equipment depends on how it was erected or assembled, work equipment, including working platforms at any height, must be inspected before use. The purpose of such an inspection is to identify whether the equipment is fit for its purpose, has been properly assembled or installed and can be used safely.

Work equipment exposed to conditions causing deterioration that is liable to result in danger must be inspected at regular intervals and also where any exceptional circumstances have occurred that are liable to jeopardise its safety. These inspections are important in ensuring that the equipment can continue to be used safely and that any deterioration is detected and remedied before it results in unacceptable risks.

A competent person should determine the nature, frequency and extent of any inspection, taking account of such factors as the type of equipment, how and where it is used and the likelihood of deterioration. Periods between inspections should be chosen on the basis of risk assessment and should be reviewed in the light of experience.

Regulation 119(1)(c) requires that working platforms used for construction work in excess of two metres high must be inspected as erected in the location they are to be used in, unless they are mobile platforms in which case they should be inspected on the site within the previous seven days. When using fall-arrest equipment, pre-use checks (visual and tactile) are essential and should be carried out before each time the equipment is used. Where users carry out these checks, they should be instructed on how to do so. Detailed inspections by a competent person should also be carried out at minimum intervals specified in the employer's inspection regime. It is recommended that a detailed inspection be undertaken at least every six months. For frequently used lanyards, it is suggested that the frequency be increased to at least every three months, particularly when the equipment is used in arduous environments (e.g. demolition, steel erection, scaffolding, skeletal steel, masts/towers with edges and protrusions). Detailed inspections should be recorded. Interim inspections may also be required, based on the employer's risk assessment for the type of equipment and its conditions of use, e.g. exposure to paints, solvents, acids or alkalis.

Lifting equipment used for people or loads is subject, under other specific Regulations, to a more detailed comprehensive inspection, called a thorough examination, which may include some dismantling or testing. Where work equipment is moved from one place of work to another, the employer in control of the equipment is required to ensure that evidence of the last inspection accompanies the equipment.

Where work equipment is hired to the user, it is important that both parties agree, in writing, exactly what inspection has been carried out and that information is available and can be passed to the workers.

Maintenance

Inspections and thorough examinations are not a substitute for properly maintaining equipment. The information gained in the maintenance process, inspections and more technical thorough examinations should inform one another. The processes should be complementary. If a maintenance log exists, make sure it is kept up to date and is accessible to the competent person performing the inspection or thorough examination. The maintenance process also needs proper management. Frequency of maintenance will depend on the equipment, the conditions in which it is used and the manufacturer's instructions. Equipment for performing work at height should be checked prior to use, e.g. through a

visual check. This will identify any fault, such as a frayed safety line, which could lead to a significant failure.

Where work equipment is hired to the user, it is important that both the hire company and the person responsible for hiring the equipment establish which party will carry out safety-related inspections and maintenance. This is particularly important for equipment on long-term hire. The terms of the agreement between the hirer and the user should record this responsibility. Both parties should agree, in writing, exactly what they are responsible for and that information should be passed to the workers.

All those performing maintenance work should be competent to do so. They should have the skills, experience and knowledge of the relevant equipment, e.g. they should be able to identify potential defects, be aware of their significance and know what action to take as a result.

Record-keeping

Employers are required to record inspections that relate to the site safety or to the work equipment so that in the event of an accident they can provide useful information. As records must be made available to a Health and Safety Authority inspector, they must be stored in a way that is accessible and is protected from being tampered with. Records may be kept electronically if they are secure and capable of being printed out.

References

HSE publication *Use of Contractors – A Joint Responsibility* (INDG368).

Health and Safety Authority's *Guidelines on Risk Assessment and Safety Statements*

See Health and Safety Executive (UK) publication, *Health and Safety in Construction HSG 150*, for further information on guard-rails (and working platforms) in construction.

EN12811 – 1:2003 *Temporary Works Equipment – Part 1: Scaffolds – Performance Requirements and General Design for Guard-Rails on Scaffolds*.

EN ISO 14122-3:2001 *Safety of Machinery – Permanent Means of Access to Machinery – Part 3: Stairways, Stepladders and Guard-Rails* for further information on guard-rails around machinery.

Health and Safety Authority's *Code of Practice for Access and Working Scaffolds* for further information on the design, erection and dismantling of scaffolds used in construction.

BS 7985:2002, *Code of Practice for the Use of Rope Access Methods for Industrial Purposes*

Industrial Rope Access Trade Association's (IRATA) *Guidelines on the Use of Rope Access Methods for Industrial Purposes*

Notes

Notes

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