

Working at Height Regulations: What it means...

Part 3: Passive Safety and its advantages

The term fall protection encompasses a broad spectrum of techniques, equipment, and legislation in hopes to minimize injury and damage due to falls. However, where possible, a fall prevention approach should be taken, eliminating the fall all together. Some examples would include engineering out the hazard or utilizing site fall protection systems (e.g. guardrails).



Passive Safety

In its very essence Passive Safety is the name given to a protection measure that does not require the involvement of the person(s) it is designed to protect. It works despite the inclusion of human beings.

This brings us to the key point about passive safety. The requirement for training. Or the lack thereof.

The use of active fall protection systems using PPE inherently requires detailed training due to the increased risks. Passive safety does not have this, and the training consists of something like "Don't climb over the guardrail" or "Only walk on the designated walkway".

This removal of risk and training requirements means that the largest cause of falls from heights is removed, that of the human factor.

Guardrail

Guardrails and handrails are barriers that prevent personnel from falling to lower levels. Where suitable, they protect the greatest number of employees with little or no training and no special maintenance. Government regulations dictate the requirements for the installation, testing and use of all barrier type systems. We discussed this in more detail in Insight Issues 1 and 2.

There are 3 main types of guardrail.

- Free Standing
- Fixed base for concrete or masonry
- Top fix for standing seam or trapezoidal sheeting.

In addition to these main types there are also folding versions where visibility of the system when not in use is a problem for planning reasons.

Material selection in guardrails can be confusing. There are standard options of aluminium, hot dip galvanised steel, pre-galvanised steel and powder coated steel, as well as specialist ones for extreme environments made from GRP or stainless steel.

The choice comes to two main points: The environmental situation dictating the longevity of the product requirement and then the aesthetics if the system can be seen from public areas.





The barrier systems in Europe should be tested to EN13374 and EN 14122-3 for industrial handrailing, not including architectural balustrade.

Walkway

Safe access across a roofing area, removing risks of slipping due to wet surfaces or inclines, or trips due to roof crowns, or indeed ensuring the worker traverses the roof avoiding all fall risks including fragile panels can be provided through the installation of walkway systems.

These systems can be manufactured from aluminium, uPVC, GRP, stainless steel or galvanised steel, and invariably are provided with a slip resistant surface.

Where there is an incline of more than 5° then the systems can be levelled to remove this risk.

By providing a safe means of access across a roof the worker is protected, but the often-overlooked advantage of this type of system is the protection the roof receives from damage from foot traffic. So many times can you see on a roof collapsed crowns on a trapezoidal roof, or troughs worn into an insulated membrane roof. A walkway system removes this risk, thus increasing the life expectancy of potentially the most expensive part of the building.



Demarcation

Controlled access zones are used as a last resort where other fall protection systems can't be used effectively. If a controlled access zone is used, the site must have a written fall protection plan created by a "qualified" person and implemented by a "competent" person, according to EN definitions.

The easiest and often most cost-effective way of producing such a controlled zone is to employ the use of demarcation systems. Often comprising of stanchions connected by coloured plastic chain these systems are a physical barrier preventing the conscientious worker from proceeding any further.

Ladder cages

Ladder cages are still a common site on most industrial workplaces, although some may consider them a dangerous form of fall protection. Ladder cages are not designed to arrest the fall of a worker or even prevent a fall except in the case of the worker's hands slipping off the rungs. They were intended to a/ provide a means of rest for the climber and b/ restrict the movement of the worker so that when falling backwards off the ladder he or she might regain a grip on it before falling too far away.

As HSE studies in the UK have shown, these are not effective means of protection and although passive safety occurs higher on the hierarchy of measures (Issue 7.01) ladder cages should be avoided in favour of vertical fall protection systems.



Arrangement of the Regulations

- Reg. 1 Citation and commencement
- Reg. 2 Interpretation
- Reg. 3 Application
- Reg. 4 Organisation and planning
- Reg. 5 Competence
- Reg. 6 Avoidance of risks from work at height
- Reg. 7 General principles for selection of work equipment for work at height
- Reg. 8 Requirements for particular work
- Reg. 9 Fragile surfaces
- Reg.10 Falling objects
- Reg.11 Danger areas
- Reg.12 Inspection of work equipment
- Reg.13 Inspection of places of work at height
- Reg.14 Duties of persons at work
- Reg.15 Exemption by the Health and Safety Executive
- Reg.16 Exemption for the armed forces
- Reg.17 Amendment of the Provision and use of Work Equipment Regulations 1998 (PUWER)
- Reg.18 Repeal of section 24 of the Factories Act 1961
- Schedule 1 Requirements for existing places of work and means of access or egress at height
- Schedule 2 Requirements for guard-rails etc.
- Schedule 3 Requirements for working platforms
 - Part 1 Requirements for all working platforms
 - Part 2 Additional requirements for scaffolding
- Schedule 4 Requirements for collective safeguards for arresting falls
- Schedule 5 Requirements for Personal Fall Protection Systems
 - Part 1 Requirements for all personal fall protection systems
 - Part 2 Additional requirements for work positioning systems
 - Part 3 Additional requirements for rope access and positioning techniques
 - Part 4 Additional requirements for fall arrest systems
 - Part 5 Requirements for work restraint systems
- Schedule 6 Requirements for ladders
- Schedule 7 Particulars to be included in a report of inspection
- Schedule 8 Revocation of Instruments

Issue 7 Parts and Contents

- 7.01 An Introduction to the Working at Height Regulations 2005
- 7.02 Hierarchy of Measures
- 7.03 Advantages of Passive Safety
- 7.04 Advantages of Walkway
- 7.05 Fall Arrest vs Fall Restraint
- 7.06 Full personal fall protection systems (ABCDE)
- 7.07 Rescue Plan Requirements
- 7.08 Syncope
- 7.09 Requirements for Work at Height Training
- 7.10 8 Step Fall Protection Plan

