



نظام الشارقة للسلامة والصحة المهنية
Occupational Safety & Health Sharjah

حكومة الشارقة
هيئة الوقاية والسلامة
Government of Sharjah
Prevention And Safety Authority



Code of Practice

Working at Height Safety

OSHJ-CoP-04

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1 Introduction

Work at height is defined as any workplace activity conducted, at, above or below ground level, where there is a risk of an employee being injured falling from any height. Falls from height are one of the biggest causes of workplace fatalities and major injuries.

2 Purpose and Scope

This Code of Practice (CoP) has been developed to provide information to entities to assist them in complying with the requirements of the Occupational Safety and Health System in Sharjah.

This Code of Practice (CoP) defines the minimum acceptable requirements of the Occupational Safety and Health System in Sharjah, and entities can apply practices higher than, but not lower than those mentioned in this document, as they demonstrate the lowest acceptable level of compliance in the Emirate of Sharjah.

3 Definitions and Abbreviations

Entities: Government Entities: Government departments, authorities or establishments and the like in the Emirate.

Private Entities: Establishments, companies, enterprises and economic activities operating in the Emirate in general.

Risk: Is the combination of likelihood of the hazard causing the loss and the severity of that loss (consequences).

Risk Management: The forecasting and evaluation of risks together with the identification of procedures to avoid or minimise their impact.

Risk Assessment: The systematic identification of workplace hazards and evaluation of the risks associated. This process takes existing control measures into account and identifies and recommends further control measures where required.

Hazard: Anything that has the potential to cause harm or loss (injury, disease, ill-health, property damage etc).

Hazard Identification: Recognising that a hazard exists and including the hazard in the risk assessment process.

Competence: The combination of training, skills, experience and knowledge that a person has and their ability to apply all of them to perform their work.

Working at Height: Is any workplace activity conducted, at, above or below ground level, where there is a risk of an employee being injured falling from any height.

MEWP: Mobile Elevated Working Platform.

Suspension Trauma: Employees using fall arrest systems may experience suspension trauma. 'Suspension trauma' is an effect which occurs when the human body is held upright without any movement for a period of time. The sustained immobility may lead to a state of unconsciousness. Depending on the length of time the suspended worker is unconscious or

immobile and the level of venous pooling, the resulting orthostatic intolerance may lead to death.

Manufacturer's Manual: The instructions, procedures and recommendations provided by the manufacturer to ensure the safe operation, maintenance and repair of the equipment.

4 Roles and Responsibilities

4.1 Entity Responsibilities

- Avoid working at height wherever possible;
- Where such work cannot be avoided, select the most appropriate equipment for the work and to prevent falls;
- Ensure all work at height is adequately planned, risk assessment based, organised and supervised;
- Ensure employees that work at height are trained and competent for the work activities;
- Ensure adequate information, instruction, supervision and training is provided to employees;
- Ensure work equipment used for working at height is adequately inspected, maintained and suitable for the purpose and conditions for use;
- Ensure that emergency procedures are in place to deal with work at height related emergencies.

4.2 Employee Responsibilities

- Not endanger themselves or others;
- Follow precautionary control measures to ensure work activities associated with work at height are performed safely and without risk to health;
- Cooperate with the entity and receive safety information, instruction, supervision and training;
- Report any activity or defect relating to work at height which they know is likely to endanger the safety of themselves or that of any other person.

5 Requirements

The entity shall ensure that work at height is planned, assessed, appropriately supervised and carried out in a manner which ensures the safety of employees and others affected by work at height activity.

The entity shall ensure that no person engages in any activity, including organising, planning and supervision, in relation to work at height or work equipment for use in such work unless they are competent or if being trained, are supervised by a competent person.

5.1 Planning

The entity shall plan their work activities, ensuring they are appropriately supervised and carried out safely. Planning includes conducting a risk assessment, the selection of work equipment and preparation for emergencies.

The entity shall plan for emergencies and rescue, and where necessary have a rescue plan in place before the work starts.

5.2 Risk Assessment

The entity shall assess working at height and the hazards arising from these work activities and implement effective control measures to reduce the exposure to the employee.

The entity shall ensure those affected by working at height understand the hazards and risks associated, control measures in place, emergency procedures and what they shall do to comply with it.

The entity shall implement the following hierarchy of control for managing work at a height:

- Avoid work at height where it is reasonably practicable to do so;
- Use work equipment or other measures to prevent falls where working at height cannot be avoided;
- Where the risk of a fall cannot be eliminated, use work equipment or other measures to minimise the distance and consequences of a fall.

Further information on identifying hazards and how to conduct risk assessments can be found in OSHJ-CoP-01: Risk Management and Control.

5.3 Selecting the Right Work at Height Equipment

Work at height equipment includes any equipment that is specifically designed to allow employees to work at height safely. The entity shall ensure that working platforms are stable, suitable and of sufficient strength and rigidity for the purpose it is intended to be used for.

The entity shall ensure that when determining the type of equipment to choose from, they consider multiple factors, including but not limited to:

- The nature, frequency and duration of work equipment use;
- The height of the job;
- How long the equipment will be in use;
- The load on the equipment;
- Whether there is level ground at the work site;
- Whether there are any obstructions;
- The available space;
- Working conditions;
- The distance of a potential fall and the risk of injury;
- The need for easy and timely evacuation and rescue in an emergency;

- What training is required;
- Any additional risk posed by the use, installation or removal of that work equipment.

Work equipment that is selected shall provide the following, including but not limited to:

- Give collective protection measures priority over individual control measures;
- Be of sufficient dimensions to allow the safe passage of employees and the safe use of any equipment and materials;
- Be capable of supporting the weight of the employees using it and any materials and equipment they are likely to use or store on it;
- A safe and secure working area for work activities to be carried out;
- A safe surface, free of hazards that could cause trips, or gaps through which employees or materials could fall;
- Be constructed to prevent objects falling over the edge which could injure people below by installing toe boards or edge protection;
- Be kept clean and tidy and not allow the dirt and debris to build up on platforms;
- The working platform is capable of carrying the load it was designed for, and not be overloaded to prevent the risk of collapse.

5.4 Types of Work at Height Equipment

Scaffold – A temporary structure or working platform, used to support an employee and materials to aid in construction, maintenance and repair. Scaffolds are widely used on site to give access to heights and areas that would be otherwise hard to access.

Mobile scaffold or tower scaffold - A temporary structure or working platform which is quick to erect, light, can be moved into place and secured. They provide vertical access. They are usually at a fixed height once erected with a steady platform and protective guardrails to provide persons working at height a safe working platform.

Mobile elevated working platform (MEWP) – A powered working platform, designed to help people to carry out work at height in safe manner.

Ladders – A piece of equipment used for climbing up and down, that consists of two vertical bars or pieces of rope joined to each other by a set of horizontal steps. Ladders can be used for work at height when a risk assessment has shown that using equipment offering a higher level of fall protection is not justified because of the low risk and short duration of use; or there are existing workplace features which cannot be altered.

Rope Access - Rope access is not a piece of equipment, but rather a working position. However, it is one of the solutions for working at height. Rope access or industrial climbing is a form of work positioning allowing employees to access difficult-to-reach locations without the use of working platforms/ladders.

Further information on specific equipment can be found in:

- OSHJ-GL-02: Mobile Elevated Working Platforms.
- OSHJ-GL-03: Scaffolding.

- OSHJ-GL-04: Mobile Access Towers.

5.4.1 Ladders

There are many types and sizes of ladders including portable, suspended, step, interlocking, extension, mobile and fixed ladders. Regardless of their use, ladders need to meet the requirements of working at height.

In addition to the factors in section 5.1, when considering whether it could be appropriate to use a ladder it is also important to establish that:

- The work activities are of short duration. As a guide, if the task would require staying up a ladder for more than 30 minutes at a time, it is recommended that other equipment is considered;
- The work is low risk or light work. Ladders are not suitable for strenuous or heavy work;
- The height of the task;
- Whether it avoids side loading;
- Whether it avoids overreaching;
- When selecting ladders use industrial ladders NOT domestic ladders. Ladders must be able to extend at least 3 rungs above the level that needs to be accessed.

Falls from ladders can occur when a 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. Ensuring that the ladder is well maintained and free from dirt or paint and that the feet are still providing effective grip are vitally important.

Portable ladders, not stepladders, should always be placed at the correct angle, which is around 75 degrees, or one metre out for every four metres up. Portable ladders can be prevented from slipping by using the following control measures, including but not limited to:

- Tying the stiles effectively to an existing structure, securing them at the top is the most effective method;
- Using an appropriate ladder stabiliser or anti-slip devices;
- Having another employee "foot" the ladder; this is where someone stands on the bottom rung to support the ladder;
- The surface on or against which a ladder is placed must be strong enough to support any loads placed upon it. The surfaces on which ladders are placed onto must be flat unless special provision is made, such as by the use of a levelling device. Weather and other factors will affect the surface.

Where an employee 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.

Ladders should not be used within 6 horizontal metres of overhead power lines unless they have been made dead or protected by insulation. Where it is essential that work be performed, employees in the vicinity of electrical circuitry should use nonconductive access equipment.

Fall arrest equipment such as safety harnesses should not be used unless identified in the risk assessment.

5.4.2 Stepladders

Stepladders are a ladder that has wide, flat steps and two pairs of legs which are connected at the top and that opens at the bottom so that it can stand independently without being attached to or supported by something else.

When using a stepladder, the entity shall ensure a risk assessment has been conducted considering the following factors, including but not limited to:

- The stepladder is suitability for the site conditions and the work activities which should be of short duration and light duty;
- The height of the task;
- The employee can balance properly when using the stepladder;
- The stepladder can be positioned close to the work activity to avoid over-reaching;
- The work activity does not involve side loading that could cause the stepladder to fall over;
- The stepladder is sited on firm, level ground;
- 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.

5.4.3 Rope Access

The entity shall ensure that rope access work is adequately planned and before rope access work commences, it shall be documented, including but not limited to:

- Pre-work analysis, to establish whether rope access methods are appropriate;
- Risk assessment, to identify any hazards, to assess the likelihood of an incident occurring and to establish control measures to minimize the risk;
- A method statement, which clearly defines the work procedure;
- A rescue plan;
- Training certificates for the employees undertaking rope access.

The entity shall ensure that to operate safely, rope access systems should comprise two separately anchored secure systems; the working line and the backup safety line.

The safety line provides the protection against a fall, should the working line fail. The employee must be provided with, and use, a harness which meets the safety requirements of personal fall protection systems for full body harnesses and 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 an employee loses control. Similar devices to arrest the fall of an employee must also be in place on the safety line.

No lone working should be allowed for rope access work.

An effective communication system should be in place between all employees. 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 a competent person or a radio system, should be in place, in accordance with the risk assessment.

Further information on fall restraint and fall arrest equipment can be found in OSHJ-GL-07: Personal Protective Equipment.

5.5 Fall Protection Systems

5.5.1 Falling Objects

The entity shall protect people from falling objects that could cause injury to people below, steps must 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 away 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 may include the use of toe boards or solid barriers.

Tool safety lanyards can be used to prevent tools and equipment falling from height by securing them with lanyards.

Rubbish chutes used to dispose of materials from height need to be managed so that the debris does not hit people below as waste travels down the structure or when it hits the skip or pile at the bottom.

5.5.2 Fragile Surfaces

The entity shall manage the risks from fragile surfaces. This applies to surfaces where there is a risk to an employee or objects falling through fragile roofs, ceilings and skylights. These surfaces may be either close to or part of the structure on which work activities are being conducted and 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.

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.

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 protection equipment is required so far as is reasonably practicable.

5.5.3 Guard Rail Systems

Guard rails may be required to make a work platform or other place of work safe by preventing falls. This applies to all guard rails, whether permanent structures or work equipment. The entity shall ensure that guard rails are used on the edge of the following, including but not limited to:

- Working platforms, stairs, ramps, walkways and landings;
- Openings in floors or edges of roof structures;
- Shafts or excavations;
- Fragile surfaces.

Where employees are working at height in a place that is protected by guard rails, the rails should not allow employees 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 minimum height for guard rails shall be at least 950 mm and require an intermediate guard rail to be provided. The gap between the top rail and intermediate rail and 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 and run the entire length of where guard rail protection is provided.

It may be necessary, in certain circumstances, to remove guard rails, fencing and other means of protection for short periods. The entity shall ensure this may only occur:

- For the time and extent necessary for the work activity, before the barrier is replaced;
- That guards are not removed while employees are at height unless there is some other safeguard in place, such as a safety net.

Control measures to protect employees while work activities are carried out could include safe systems of work or permit to work systems, where appropriate. These control measures could also include the provision of a fall protection system, limiting access to specified people and ensuring that those performing the work activity are provided with adequate information, instruction, supervision and training.

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

5.5.4 Collective Safeguards

Collective safeguards for arresting falls include nets, mats and inflated devices and are designed to catch a falling person. Collective safeguards can only be used where:

- A risk assessment has demonstrated that the work activity can be performed safely while using it and without affecting its effectiveness;
- The use of other safer work equipment is not practical;
- An adequate number of employees are available, if required to assist with any aspect of the safeguards operation and have received adequate training specific to the safeguard used, including rescue procedures;

- The safeguard is suitable for the work being conducted and of sufficient strength to safely arrest the fall of any employee who is liable to fall;
- When using a safeguard that is designed to be attached:
 - It is securely attached to all the required anchors;
 - Has anchors, and a means of attachment that are suitable and of sufficient strength and stability for the purpose of safely and supporting the foreseeable loading in arresting any fall or during any subsequent rescue.
- When using an airbag, landing mat or other similar safeguard it is stable;
- When using a safeguard that expands when arresting a fall, it affords sufficient clearance;
- 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 that are designed to catch a falling person may need to be anchored to prevent movement and the manufacturer's manual 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 of rescue procedures which may need to be carried out and to the effects of landing, shall be considered prior to work activities beginning.

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.

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 the air bag 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.

5.5.5 Personal Fall Protection Systems

Personal fall protection systems comprise of either fall restraint/prevention or fall arrest systems.

5.5.5.1 Fall Restraint/Prevention Systems

This system uses a body holding device connected to a reliable anchor, preventing the user from reaching zones where the risk of fall exists, preventing the user from falling. An example of a fall restraint system is a lanyard tied off at a set length from a weighted tie off point.

5.5.5.2 Fall Arrest System

This system uses a body holding device connected to a reliable anchor. They arrest and restrict a fall by preventing the user from colliding with the ground or structures. The arrest system does not protect the user from the fall but stops the user before hitting the surface. An example of fall arrest system is the use of a safety harness.

Key concerns when using personal fall protection systems, include but not limited to:

- In the hierarchy of controls, fall restraint is preferred to fall arrest;

- Training shall be provided for those using personal fall protection;
- The entity shall have a plan on what to do when an emergency occurs and how to respond to that emergency:
 - Providing a rapid and effective trained rescue team;
 - Where employees working at height have activated fall arrest systems, rescue equipment shall be available to retrieve employees as any delay might have severe consequences;
 - Providing first aid response to employees who have been rescued from height to prevent possible suspension trauma.
- When in use the personal fall protection system shall be securely attached to at least one anchor and each anchor and the means of attachment is suitable and of sufficient strength and stability for the purpose of supporting any foreseeable loading;
- In the event of a fall by any employee, an injury from the personal fall protection system is minimised.

5.5.6 Personal Protective Equipment

The entity shall ensure that employees are provided with suitable personal protective equipment in addition to personal fall protection systems identified in section 5.5.5.

Provision of additional personal protective equipment shall consider the following, including but not limited to:

- Suitable safety helmets to provide head protection with chin straps to prevent the helmet falling off;
- Suitable footwear to protect feet and provide a good grip;
- Any other working at height personal protective equipment identified as being required in the risk assessment.

Further information on personal protective equipment can be found in OSHJ-GL-07: Personal Protective Equipment.

5.6 Inspection and Maintenance of Work at Height Equipment

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, the type of equipment and manufacturer's manual.

All work at height equipment shall be inspected:

- Before first use;
- Before each use, such as a visual pre-user check;
- After each time it is re-installed;
- After any event that could affect equipment, such as adverse weather;
- At specific intervals with a detailed thorough examination.

The inspection process should include all work at height equipment, accessories and personal protective equipment.

The entity shall record and retain inspection and maintenance of work at height equipment records.

Further information on the selection, inspection and maintenance of work equipment can be found in OSHJ-CoP-13: Safe Work Equipment.

6 Training

The entity shall ensure that all personnel involved in work at height are adequately trained in languages and in a format that employees understand, including but not limited to:

- Those responsible for work at height risk assessment and selection of work at height equipment;
- Supervisors of work at height activities;
- Those undertaking work at height;
- Those undertaking rescue operations and emergency response;
- Operators of work at height equipment;
- An employee that is required to use rope access to access an area should be deemed competent and must meet the criteria of the UAE or any higher internationally recognised standard;
- An employee that use ladders should be provided with instruction and information on how to use the ladders provided safely.
- Further information on specific work at height training can be found in:
 - OSHJ-GL-02: Mobile Elevated Working Platforms;
 - OSHJ-GL-03: Scaffolding;
 - OSHJ-GL-04: Mobile Access Towers.

The training provided will depend on the type of equipment and its use, including but not limited to:

- The use of fall protection systems;
- The use of equipment such as scaffolding, mobile elevating work platforms, ladders and mobile towers;
- Awareness of specific working at height hazards identified in the risk assessment.

Periodic refresher training shall be conducted to ensure employees competency is maintained, including but not limited to:

- Where training certification has expired;
- Where identified as part of a training needs analysis;
- Where risk assessment findings identify training as a measure to control risks;

- Where there is a change in legal requirements;
- Where incident investigation findings recommend refresher training.

The entity must record and maintain accurate training records of OSH training for employees.

Further information on training can be found in OSHJ-GL-26: Training and Competence.

7 Emergency Preparedness and Response

The entity should be prepared for emergencies that may occur during working at height. Due to increased risks from working at height the entity needs to have a plan on what to do when an emergency occurs and how to respond to that emergency.

Other considerations to include in the emergency plan, include but not limited to:

- Providing a rapid and effective rescue where employees working at height have activated fall protection systems, rescue equipment shall be available to retrieve employees as any delay might have severe consequences;
- Providing first aid response to employees who have been rescued from height to prevent possible suspension trauma;
- Appointing emergency response personnel who can take charge and make decisions on behalf of the entity during an emergency and liaise with emergency services;
- Employees are trained in emergency response, including information of first aid arrangements and where first-aiders, first aid equipment and facilities are located;
- Employees are appointed as first-aiders and available at each location and on each working shift.

Further information on first aid can be found in OSHJ-CoP-16: First Aid at Work.

Further information on developing an emergency plan can be found in OSHJ-CoP-18: Emergency Preparedness and Response.

8 References

OSHJ-CoP-01: Risk Management and Control

OSHJ-CoP-13: Safe Work Equipment

OSHJ-CoP-16: First Aid at Work

OSHJ-CoP-18: Emergency Preparedness and Response

OSHJ-GL-02: Mobile Elevated Working Platforms

OSHJ-GL-03: Scaffolding

OSHJ-GL-04: Mobile Access Towers

OSHJ-GL-07: Personal Protective Equipment

OSHJ-GL-26: Training and Competence

9 Document Amendment Record

TITLE	Working at Height Safety		
DOCUMENT AMENDMENT RECORD			
Version	Revision Date	Amendment Details	Pages Affected
1	15 SEP 2021	New Document	N/A