ROOFTOP WORKER – SAFETY & ACCESS
SCHEME SPECIFICATION

ENERGY & UTILITY SKILLS

Rooftop Worker- Safety & Access Scheme Specification

Guidance notes:

1. Each unit contained within this Rooftop Worker – Safety & Access scheme sets out the knowledge & understanding required by individuals and the practical skills that each individual needs to demonstrate in order to access and work safely on flat roofs. It does not include working on pitched or fragile roofs.

   If an individual is only ever going to be accessing a flat rooftop from a fixed staircase with normal everyday access arrangements (such as a standard door that leads onto a protected rooftop for simple observation purposes), they would only be required to attend a Rooftop Awareness course that includes as a minimum modules 1-3 and 12.

2. The knowledge and understanding learning outcomes have been categorised as either:

   - **Mandatory** which must be delivered and assessed within the programme of learning (**31** learning outcomes)

     and

   - **Optional**. Whilst each of these outcomes must be delivered within the programme of learning, you are required to select a number of optional outcomes from each unit for the purposes of assessment (an additional **10** from 25 optional outcomes).

3. Each individual must also be assessed in relation to each of the **26** practical learning outcomes shown within each unit. These have been shown as requiring mandatory assessment.

Unit 1 - Understanding legislation and safety standards

The aim of this unit is to provide individuals with the knowledge and understanding of the relevant legislation and guidance that apply to working on a rooftop at height.

- All **4** learning outcomes are mandatory and must be assessed for this unit

Knowledge and understanding

Learning outcomes	Knowledge and understanding	Assessment
1.1 Understand the national legislation relevant to Working at Height	Main elements of: • Health & Safety at Work Act, 1974 • Work at Height Regulations 2005 • Lifting Operations and Lifting Equipment Regulations (LOLER) 1998	Mandatory
1.2 Know the legislation relevant to equipment inspection	LOLER 1998 requirements: • Lifting equipment to be thoroughly examined every 12 months • Lifting equipment used for carrying people and lifting accessories like slings, shackles, and ropes to be thoroughly examined every 6 months • Equipment and accessories must be inspected in between examinations PUWER (Provision and Use of Work Equipment Regulations) 1998 requirements: • Inspection at suitable intervals, where work equipment is exposed to conditions causing deterioration liable to result in dangerous situations The Personal Protective Equipment at Work Regulations 2022 requirements:	Mandatory

	• Employers must maintain fall arrest equipment and ensure it is in good repair, including replacement when necessary The Work at Height Regulations 2005 requirements: • Equipment should be inspected at suitable intervals, and each time after exceptional circumstances which might jeopardise safety have occurred	
1.3 Know the industry guidance and expectations for working on a rooftop at height	Understanding of agreed rules, for example: • Individuals who feel unwell or are under the influence of drugs or alcohol must not go onto roof areas • Individuals may need to undertake a Radio Frequency radiation awareness course. MATS guidance is detailed in GN-020 – RF Safety for Non-Telecom Workers • Other training may be required by certain site owners or customers • A competent person must carry out a risk assessment prior to climbing • Fixed fall arrest systems must be used when in place and serviceable • MATS guidance detailed in GN-011 – Rooftop Access and Work	Mandatory
1.4 Know the restrictions on lone working and access to roof top areas	• Ensure that site owners rules about lone working are followed • Lone working should only take place in safe areas with edge protection or designated and marked walkways • If it is necessary to climb fixed ladders taller than 3 metres on the roof area, then fall arrest equipment must be used • If a single ladder run is greater than 10 metres, this would require an individual to hold either a valid EUSR registration for the Basic Tower Climbing & Rescue scheme for MATS site owners, or a similar programme of training and assessment of climbing competence in other industries • Lone working is not permitted immediately adjacent to fragile roofs • Lone working Individuals must notify an appropriate responsible person before accessing the roof area, and again after returning inside the building	Mandatory

Unit 2 – Managing common hazards

The aim of this unit is to provide individuals with the knowledge and understanding of some of the common hazards and risk control measures associated with working at height on rooftops.

- Learning outcomes **2.1, 2.2, 2.3, 2.4** and **2.9** are mandatory and must be assessed for this unit
- Please select **2** optional learning outcomes to assess for this unit

Knowledge and understanding

Learning outcomes	Knowledge and understanding	Assessment
2.1 Know the possible effects of falling from height on Personal Fall Protection Equipment (PFPE)	Awareness that the following may occur: • Deployment of shock absorber • Stress on equipment, resulting in the necessity to remove and destroy harnesses, lanyards, etc • Stress on structural steelwork etc resulting in potential failure, if insufficient, of anchor points	Mandatory
2.2 Know the control measures that can be put in place to reduce the risk of falling	Awareness of the need for: • A strong risk assessment procedure • Good climbing technique • Good physical fitness • Avoidance of the use of alcohol and illegal or prescription drugs • Working from within a protected platform where possible • Correct use of a work positioning system when in the work position • Selection of suitable anchor points for fall protection equipment	Mandatory

	• Use of fall protection systems when using fixed vertical access ladders (either a fixed fall arrest system or twin lanyards with hooks) • Awareness of the risk of secondary falls • Awareness of the need for portable ladder training	
2.3 Know the risks from possible falling objects	For example, an understanding of the following: • The force generated by a falling object is a function of weight x height x gravitational pull • Even small objects falling from a significant height, can result in fatality • Falling objects can travel a significant distance from the rooftop • Hard hats provide limited protection against falling objects	Mandatory
2.4 Know the control measures that can be put in place to reduce the risks from falling objects	For example, an awareness of the following control measures: • Minimising the objects taken aloft • All tools and equipment must be tethered • Using tool bags with closures or other anti-spill mechanisms • Setting up drop zones at ground level • Excluding people from areas at ground level which are at significant risk • Ensuring hard hats are worn correctly and within drop zones	Mandatory
2.5 Know the potential risks from weather and exposure and how to minimise them	For example, an understanding of the risks of the following: • Ensuring that a risk assessment considers the conditions and suitable controls (including needing to abort the job) is implemented • Hyperthermia in hot conditions; the importance of keeping hydrated so water must be carried aloft • Hypothermia in cold conditions; ensuring that suitable wet weather gear is used • Ensuring individuals are aware of the signs of hypothermia and hyperthermia • Working in windy conditions can increase fatigue and increase the likelihood of falls	Optional

	• The need to avoid climbing when a rooftop has ice on it • Other slippery roof surface conditions, for example water, algae etc	
2.6 Know the possible chemical and biological hazards associated with roof areas and how to mitigate them	For example, an understanding of the following: • Lead paint covered rooftops - individuals can ingest lead if they eat or smoke after touching lead paint • Chromate paint covered rooftops are a risk if materials are inhaled, for example if abrading or cutting. Chromate can cause respiratory issues and irritation to skin and eyes. Specific risk assessment to be carried out if chromate dust will be released • Dried bird guano can cause psittacosis if inhaled • Toxic fumes can be emitted from chimneys with tops close to roof level • Exposed asbestos materials may be found in plant rooms and roof spaces in old buildings on the access route through the building	Optional
2.7 Know the possible risks associated with wild birds' nests and how to mitigate them	For example, an understanding of the following: • The risks associated with nesting birds due to guano and associated disease – for example, psittacosis – and risks due to the aggressive behaviour in certain species • Awareness of Wildlife and Countryside Act requirements around the disturbance of birds' nests and nesting birds • The need to withdraw from a climb if a nest is identified	Optional
2.8 Know other common risks posed by rooftop mechanical and electrical plant	For example, an understanding of the following: • Risks from air conditioning units, such as Legionella bacteria from cooling towers (rooftops that contain water and a fan as part of centralized building air cooling systems) • Vented systems on roofs which may emit fumes, steam, or liquids	Optional
2.9 Know the risks posed by rooftop radio antenna systems	• Individuals may need to undertake a Radio Frequency radiation awareness course. MATS guidance detailed in GN-020 – RF Safety for Non-Telecom Workers	Mandatory

	• Other training may be required by certain site owners or customers • Know how to recognise radio antennas • Be aware of, and avoid, marked radio frequency exclusion zones on roof areas • Take note of warning signs at roof entrances and hazard signs near radio antennas • Use radiation monitors if working near potential RF sources or unknown equipment • Ensure any work inside exclusion zones is done after isolation and under a permit to work from the system operator	

Unit 3 - Assessing risk

The aim of this unit is to provide individuals with the knowledge and understanding of how to practically carry out risk assessments, and how to use safe systems of work relevant to working on rooftops at height.

- Learning outcomes **3.1, 3.5** and **3.10** are mandatory and must be assessed for this unit
- Please select **2** optional learning outcomes to assess for this unit

Knowledge and understanding

Learning outcomes	Knowledge and understanding	Assessment
3.1 Know the 5 steps required to carry out a risk assessment	Understanding of risk assessment to include: • The identification of hazards • The potential for harm and the identification of who may be affected • Risk evaluation and the actions required to mitigate risks • The recording of significant findings • The need to review risk assessments and update them as necessary	Mandatory
3.2 Know the requirements of the work at height hierarchy and how to apply them	For example, understanding of the Work at Height Regulations 2005 and the need to: • Avoid work at height • Prevent falls by using existing workplace • Prevent falls using collective equipment – e.g., handrails • Prevent falls using personal protective equipment	Optional

	• Minimise distance and consequences using collective equipment, netting, airbags etc • Minimise distance and consequences using Personal Fall Protection Equipment (PFPE)	
3.3 Know how to plan for a rescue when carrying out a risk assessment for roof work tasks	Understanding of how to plan for a rescue to include the need to: • This may be a Dynamic Risk Assessment (DRA) as it is the first visit to the site • Ensure access to the roof is detailed/known and any obstructions will not prevent rescue from taking place • Ensure location of roof/site is known so details can be passed to the emergency services • Ensure adequate communications are available if relied upon for contacting the emergency services	Optional
3.4 Know the relevant documentation that must be in place prior to working at height	Awareness of the need to: • Ensure a permit is in place or permission has been given by the building/rooftop owner/operator prior to accessing the roof area or climbing; the permit may detail specific hazards associated with the rooftop that need to be considered	Optional
3.5 Know the importance of visual inspection of the rooftop prior to, and during, work at height activities	For example – prior to accessing the rooftop, workers must: • Ensure the rooftop has been inspected and is deemed 'safe' by the owner. This could be through a Safe To Climb (STC) tag system on the rooftop or through the rooftop owners granting of a permit to access • Ensure that any fixed fall arrest system is in a serviceable condition – that it has not been deployed and is certified as safe to use	Mandatory

3.6 Know the importance of assessing that the roof area they are accessing is safe to walk on	For example: • Keep away from the areas of fragile roof materials such as corrugated asbestos, cement, and skylights • Follow marked out walkways • Keep away from bitumen painted roof areas	Optional
3.7 Know the importance of identifying hazards on the access/ egress route through the building	• Know about the risks from electrical and mechanical equipment if the access route goes through plant rooms • Know about the risks from using fixed ladders and access hatches inside the building • Damaged material such as asbestos and others	Optional
3.8 Know the importance of taking current and forecast weather conditions into account before accessing roof areas	• Avoid periods of high wind, rain, lightening, snow, or ice • Avoid excessive heat or cold • Ensure the use of suitable personal protective clothing with non-slip footwear, wind and weatherproof outer clothing, and a safety helmet	Optional
3.9 Know how to undertake and complete a Dynamic Risk Assessment (DRA)	• Include all members affected by the activity • Identification of hazard on a rooftop • Documenting a DRA when it is applicable to do so • Review of the hazards once applied • Continue to perform a DRA whist at the rooftop	Optional

Practical skills

Learning outcomes	Knowledge, understanding and skills	Assessment
3.10 Demonstrate how to carry out a Dynamic Risk Assessment (DRA) for a task or activity that involves	To include: • A visual inspection • The identification of potential hazards	Mandatory

accessing a rooftop and working at height	• The potential for harm and the identification of who may be affected • Risk evaluation • The actions required to mitigate the risks • The recording of significant findings	

Unit 4 - Using harnesses

The aim of this unit is to provide individuals with the knowledge, understanding and the practical skills required of the selection, inspection, fitting, and use of harnesses and how to store, clean and maintain them after use.

- Learning outcomes **4.4** and **4.5** are mandatory and must be assessed for this unit
- Please select **1** optional learning outcome to assess for this unit

Knowledge and understanding

Learning outcomes	Knowledge and understanding	Assessment
4.1 Know the industry guidance on the frequency and type of inspection required of personal fall protection equipment	An awareness of the following: • Lanyards should be subject to pre-use checks, detailed inspections, and interim inspections • Employer's inspection frequency regime. Industry accepted frequency is a minimum of every 6 months • It is essential that the person carrying out any inspection is sufficiently independent and impartial to allow them to make objective decisions and has appropriate authority to discard defective equipment	Optional

Learning outcomes	Knowledge and understanding	Assessment
4.2 Know the content of documentation that should accompany a harness and other fall protection equipment	For example, documentation should include: • Certificate of conformity including the standards to which the harness adheres • Equipment serial number • Date of manufacture • Manufacturer's user instructions • Manufacturer's recommendations for replacement	Optional

4.3 Know how to store, clean, and maintain climbing harnesses	For example: • Storage in a clean, dry place away from direct sunlight • Storage away from equipment which could damage harness, e.g., when in transit • Do not dry webbing products over a direct heat source • Do not stand on a harness when donning/removing • Do not use marker pens or solvents • Clean in line with manufacturer's instructions	Optional

Practical skills

Learning outcomes	Knowledge, understanding and skills	Assessment
4.4 Demonstrate how to inspect harnesses and fall protection	An understanding of the need to check for and remove harnesses or equipment from use if any of the following are found: • Cuts of 1mm or more at the edges of webbing	Mandatory

equipment for safe use in line with guidance	• Surface abrasion across the face of the webbing and at the webbing loops, particularly if localised • Abrasion at the edges, particularly if localised • Damage to stitching, for example, cuts or abrasion • Knots in lanyards, other than those intended by the manufacturer • Evidence of chemical attack often indicated by flaking of the surface. There may also be a change to the colour of the fibres • Heat or friction damage indicated by fibres with a glazed appearance which may feel harder than surrounding fibres • Evidence of UV-degradation. This is difficult to identify, particularly visually, but there may be some loss of colour if dyed and a powdery surface • Partially deployed energy absorber for example, short pull-out of tear webbing • Contamination, for example with dirt, grit, or sand which may result in internal or external abrasion • Damaged or deformed fittings, for example karabiners, screw link connectors, and scaffold hooks • Damage to the sheath and core of a kernmantle rope, for example, rucking of the core detected during tactile inspection • Rusting or pitting of metal work, for example D-rings	
4.5 Demonstrate how to correctly fit a harness in line with manufacturer's instructions and/or industry guidance	For example, the need to: • Ensure D-ring is situated halfway between the shoulder blades • Ensure harness is correct 'tightness'. For example, for leg straps you should be able to fit a flat hand between the strap and the wearer's leg, but not a fist • Ensure chest straps are adjusted so that the front D ring is at the sternum • Ensure straps are not twisted • Carry out a "buddy check" to ensure harness is correctly fitted and adjusted	Mandatory

Unit 5 - Using fall arrest lanyards

The aim of this unit is to provide the learner with the knowledge, understanding and practical skills of using fall arrest lanyards and how to conduct a user inspection.

- Learning outcomes **5.4, 5.5, 5.6, 5.7, 5.8** and **5.9** are mandatory and must be assessed for this unit
- Please select **2** optional learning outcomes to assess for this unit

Knowledge and understanding

Learning outcomes	Knowledge and understanding	Assessment
5.1 Know the legal requirements affecting the use of fall arrest lanyards when working at height	An awareness that: • Fall arrest lanyards must be used in line with manufacturer's instructions • Fall arrest lanyards must be used if other options have been exhausted and workers are in a position where they could still fall • Fall arrest lanyards must be regularly inspected, for example, this might be in line with manufacturer's instructions and document INDG367	Optional
5.2 Know how to identify if PFPE (Personal Fall Protection Equipment) has been involved in a fall incident	Signs such as: • Partially deployed energy absorber, for example, short pull-out of tear webbing • Deformed or damaged karabiner or maillon	Optional
5.3 Know how to conduct a user inspection, in line with manufacturer's instructions	For example, check for and remove, if any of the following is found: • Cuts of 1mm or more at the edges of webbing	Optional

	• Surface abrasion across the face of the webbing and at the webbing loops, particularly if localised • Abrasion at the edges, particularly if localised • Damage to stitching (for example, cuts or abrasion) • Knots in lanyards, other than those intended by the manufacturer • Chemical attack often indicated by flaking of the surface. There may also be a change to the colour of the fibres • Heat or friction damage indicated by fibres with a glazed appearance which may feel harder than surrounding fibres • Evidence of UV-degradation. This is difficult to identify, particularly visually, but there may be some loss of colour if dyed and a powdery surface • Partially deployed energy absorber, e.g., short pull-out of tear webbing • Contamination, for example with dirt, grit, sand which may result in internal or external abrasion • Damaged or deformed fittings, for example, karabiners, screw link connectors, scaffold hooks • Damage to the sheath and core of a kernmantle rope, for example, rucking of the core detected during tactile inspection	

5.4 Know how to take fall factors and minimum clearance distances into account when using lanyards	• The fall factor varies between 0,1 and 2
	• The fall factor is the ratio between the height of the fall and the length of rope that is available to absorb that fall
	• The lower the value of the fall factor, the less impact forces are applied to the body of the person and the 'safer' the fall
	• Instructors must give details of calculation: fall factor = height of fall/length of lanyard
	• Minimum clearance distance examples are given in BS8437:2005. Code of practice for selection, use and maintenance of personal fall protection systems
	• Clearance distance required is a function of:
	  · length of energy absorbing lanyard
	  · deployment distance
	  · height of faller
		Mandatory

	· safety distance (1m)	

Practical skills

Learning outcomes	Knowledge, understanding and skills	Assessment
5.5 Demonstrate how to correctly attach fall arrest systems to a harness	• The use of front and rear attachment points • The use of a maillon as a connector; or if using a karabiner, why a triple action karabiner is preferable	Mandatory
5.6 Demonstrate how to correctly apply lanyard hooks	• The use of the correct method for ensuring that the hook is properly engaged • The application of hooks so as not to incur forces that they are not designed to take such as side loadings • Minimising the angle between lanyards, for example when both in use, to minimise forces	Mandatory
5.7 Demonstrate how to park double lanyard hooks so as not to bypass the absorber device	• Use of sacrificial “parking loops”	Mandatory
5.8 Demonstrate how to apply hooks at a suitable height to minimise fall factors	• Hooks should be placed as high as reasonably possible to minimise fall factors • Hooks should be placed on horizontal steelwork where possible to prevent the hook from falling to a lower position	Mandatory
5.9 Demonstrate how to use fall arrest lanyards appropriately when the steelwork is too large for lanyard hooks	For example: • Choking back onto lanyard only when an approved and appropriate choking ring is provided • Use of fixing strops etc around fixed structural anchors • Using retractable lines and others when necessary	Mandatory

	• Anchor point slings (to EN795) can be used to attach to	

Unit 6 - Using fixed fall arrest and restraint systems

The aim of this unit is to provide individuals with knowledge and understanding of the different types of fixed fall arrest and restraint systems and how to inspect, use, clean, store, and maintain them.

- Learning outcomes **6.2, 6.3 and 6.5** are mandatory and must be assessed for this unit
- Please select **1** optional learning outcome to assess for this unit

Knowledge and understanding

Learning outcomes	Knowledge and understanding	Assessment
6.1 Know the legal requirements affecting the use of fixed fall arrest systems when working at height	An understanding that: • If a fixed system is fitted it should be used, and the worker should have assurance that the system has been inspected and is serviceable. • If a fixed system such as a wire system or rail system is used, British standards apply that detail install standards, training for all persons in the use of the system, and inspection frequencies • Only system compatible kit should be used, and the load capacity of the system should be marked on the system and followed • The system must always be marked with an inspection date	Optional
6.2 Know how the hierarchical approach applies to fixed fall arrest systems when working at height	• Where a fixed fall arrest system is installed, it must be used • Use of fixed fall arrest systems minimise the distance and consequences of falls from height more effectively than the use of lanyards	Mandatory

6.3 Know how and when to inspect trolleys and fixed systems	For example: • The need to have assurance that the system has been inspected and is serviceable before use • Use visual aids where available, for example the spinning disc on a Latchways wire system • The need to check for visual damage after use • A formal inspection on a six-monthly basis, and annual inspection of the system itself. Both should be recorded	Mandatory
6.4 Know how to store, clean, and maintain fall arrest systems	For example: • Keeping the gear in good order is vital • Equipment must be dried out and cleaned if contaminated, and then re-inspected before storing • Manufacturer's instructions should always be followed • Advice can be obtained from a PFPE (Personal Fall Protection Equipment) inspector or through a specialist contracted company • The required formal inspections at six monthly and 12 monthly intervals should be noted and followed	Optional

Practical skills

Learning outcomes	Knowledge, understanding and skills	Assessment
6.5 Demonstrate how to use different types of fixed fall arrest systems safely and correctly	For example: • Systems such as Latchways, Glideloc, Railok, and Metreel all work on the same principle of secure attachment to them with smooth movement of the travelling/attachment device whilst attached • Understanding how to attach at a place of safety and be familiar with the operation of the system/traveller	Mandatory

	• Understanding of attachment and detachment • Awareness of the limitations of devices • Ensuring that the attachment device is secured properly to the fixed system before leaving the place of safety	

Unit 7 - Using work positioning lanyards or similar equipment

The aim of this unit is to provide individuals with the knowledge, understanding and practical skills of how to use work positioning lanyards safely.

- All **5** learning outcomes are mandatory and must be assessed for this unit

Practical skills

Learning outcomes	Knowledge, understanding and skills	Assessment
7.1 Demonstrate how to attach a lanyard correctly to a ladder or steelwork system	• Awareness that if a work positioning lanyard is being used the user should be backed up with a fall arrest device • Lanyards should be used in conjunction with a fall arrest harness to provide additional support to the user, allowing them to work more comfortably and safely in order to leave hands free for work • A work positioning lanyard has no shock absorbing properties; it is not a fall arrest lanyard and must not be used for this purpose • Awareness of types and places that lanyards can be connected to (for example, an, aluminium ladder stile)	Mandatory
7.2 Demonstrate how to lean back and trust the work positioning lanyard leaving hands-free	• Using the lanyard to free up hands for work	Mandatory
7.3 Demonstrate how a fall arrest system is used in	• The fall arrest system is the protection device. The positioning device assists and makes the user comfortable and secure whilst working	Mandatory

addition to the work positioning lanyard		
7.4 Demonstrate how to attach a work positioning lanyard correctly to the harness	For example: • The work positioning lanyard can be attached to the EN358 D-rings on the side waist area, with the rope going around a suitable strong point and attaching to the other side • There is an adjusting device to lengthen the rope and karabiners/snap hook on the end to secure into the harness D-ring	Mandatory
7.5 Demonstrate how to inspect work positioning lanyard equipment	• Before and after every use • The need to check that it is free from cuts, abrasions, and contamination • The need to check that all mechanical parts are working and not bent or damaged	Mandatory

Unit 8 - Selecting appropriate anchor points

The aim of this unit is to provide individuals with the knowledge, understanding and practical skills of selecting appropriate anchor points.

- All **4** learning outcomes are mandatory and must be assessed for this unit

Knowledge and understanding

Learning outcomes	Knowledge and understanding	Assessment
8.1 Know how to select an anchor point which can take the loads that will be applied to it	For example: • Fall arrest safety anchor eye bolts (tested and certified) • Structural anchors such as large steel beams on site • Formal anchors which are marked with an inspection date • EN795 Class A1: Structural anchorages • BS 8610:2017	Mandatory
8.2 Know the type of anchor points which would be unsafe	For example: • Antenna mounting bracketry • Anti-climb devices • Grillage platforms • Ladder hoops • Platform handrails • Feeder or cable brackets • Drainpipe and other pipe work and brick plinths • Chimneys	Mandatory

8.3 Know the different places that anchor points can be situated	For example: • Structural steelwork etc which can take the likely loads imposed by a fall, for example, BS EN 795:2012 gives 12kN as the static strength an anchor must be able to take • Unquestionably sound steelwork/structure	Mandatory

Practical skills

Learning outcomes	Knowledge, understanding and skills	Assessment
8.4 Demonstrate how to protect lanyards, slings, and ropes from sharp edges	For example: • Ensuring that the rescue rope never goes directly over a sharp edge or something likely to cause damage to the rope • The range of protective equipment available, such as simple rope covers and edge mats to intricate roller devices • Ensuring that the edge protector does not hinder the rope movement but provides a barrier between the rope and edge • Ensuring that the edge protector is secure at the edge to prevent it slipping away • Monitoring the edge protector as it is a point of potential failure	Mandatory

Unit 9 – Setting up and using temporary work restraint systems

The aim of this unit is to provide individuals with the knowledge, understanding and practical skills of how to set up and use temporary work restraint systems.

- All **4** learning outcomes are mandatory and must be assessed for this unit

Knowledge and understanding

Learning outcomes	Knowledge and understanding	Assessment
9.1 Know how to set up and use portable anchors for short term flat roof work	• Single deadweight anchor • A wire linked deadweight anchor • Awareness of limitations given by the manufacturer Examples: • KS weight anchor • KEE weight anchor • Roof man safety anchor • Weight Angel mobile safety anchor • Weightanka	Mandatory
9.2 Know how to select and set up a restraint lanyard	• Know when to use a fixed length lanyard, an adjustable restraint lanyard, and when to use a self-reeling fall arrester • Know that only a self-reeling fall arrester that has been certified for horizontal use by the manufacturer should be used for restraint • Know how to find a suitable anchorage point and attach the restraint lanyard	Mandatory

Practical skills

Learning outcomes	Knowledge, understanding and skills	Assessment
9.3 Demonstrate how to choose a location for a portable roof anchor on a flat roof	For example: • Suitable roof surface condition • Distance from roof edge • Appropriate location for task • MATS guidance is provided in GN-011 – Rooftop Access and Work	Mandatory
9.4 Demonstrate how to assemble and use a portable work anchor on a flat roof	• Know how to attach and adjust a restraint lanyard before approaching unguarded edge	Mandatory

Unit 10 – Working with edge protection systems

The aim of this unit is to provide individuals with the knowledge and understanding of how to use edge protection systems.

- Learning outcomes **10.1, 10.2** and **10.4** are mandatory and must be assessed for this unit

Knowledge and understanding

Learning outcomes	Knowledge and understanding	Assessment
10.1 Know how to recognise a safe parapet or guard rail	Understand that: • The Working at Height Regulations require a guard rail to consist of a minimum two horizontal rails with a minimum top rail height of 950mm (1100mm under UK Building Regulations) and any vertical gap not exceeding 470mm • Can be a solid parapet or metal guard rail • For very short duration work the guarding may not need to be so robust (HSG 33) • Counterbalanced systems can be used, which rest on the roof surface	Mandatory
10.2 Know how to recognise hinged guard rails	Know that: • Hinged guard rails which fold down when not in use to improve building appearance must be deployed when working on a roof where they are fitted • Hinged guard rails provide a guard rail close to a roof edge with a small parapet	Mandatory

10.3 Know that permanent netting does not normally provide personnel protection	Know that: • Cantilevered safety netting around roof edge can provide fall protection • Manufacturer's instructions must be followed • That vertical nets to prevent access by pigeons and other birds do not provide fall protection	Optional
10.4 Know when edge protection is required	Know that: • There is no prescribed safe distance given for working near an unprotected edge • When physical demarcation barriers are provided to mark out roof top walkways, HSG 33 says they should be at least 2 metres from the roof edge or fragile roof areas • Barriers must be durable and obvious • Bunting, tape, and painted lines at foot level are not acceptable for marking out safe roof top walkways	Mandatory

Unit 11 – Using additional fall protection equipment

The aim of this unit is to provide individuals with the knowledge and skills to use additional PFPE (Personal Fall Protection Equipment) necessary to access some parts of flat roofs.

- **Both** learning outcomes are mandatory and must be assessed for this unit

Knowledge and understanding

Learning outcomes	Knowledge and understanding	Assessment
11.1 Know how to inspect additional fall protection equipment and identify any safety issues before use	• The need to refer to user manuals and ensure that individuals involved are suitably trained and know how to use the equipment and its limitations • The importance of checking equipment before and after using it • An understanding of the correct operation of equipment to enable proper inspection	Mandatory

Practical skills

Learning outcomes	Knowledge, understanding and skills	Assessment

11.2 Demonstrate how to safely use a range of equipment	• The user must be fully aware of how to operate equipment and understand the safety features, limitations of the equipment, inspection requirements, and training requirements.
	• For example:
	  • Retractable line systems (angles of operation)
	  • Drop lines
		Mandatory

Unit 12 – Consideration of emergencies and rescue arrangements

The aim of this unit is to provide individuals with the knowledge and understanding of the requirement for an effective rescue plan (not techniques) for any work on rooftops at height and an awareness of some of the issues to consider when developing plans.

- Learning outcomes **12.1, 12.3** and **12.6** are mandatory and must be assessed for this unit
- Please select **1** optional learning outcome to assess for this unit

Knowledge and understanding

Learning outcomes	Knowledge and understanding	Assessment
12.1 Know the importance of having detailed knowledge of the site where the work is taking place	For example: • Safe access and egress methods (Locked gates, doors, etc) • How to get the equipment on and off the roof • Stairs/ladders	Mandatory
12.2 Know the potential pitfalls associated with the reliance on postcodes	• Understand that rural locations cover wide areas • People do not remember postcodes but do remember street names • Not all postcodes are registered on satellite navigation devices • Postcodes do not provide the access routes to places • Postcodes can take you near the site, but not always where you are	Optional
12.3 Know the limitation of the access route through the building	• Be aware of any space constraints on the access route such as cat ladders, doorways, and hatchways • Ensure that the planned evacuation route takes the dimensions and potential need of stretchers and any other assessed emergency rescue equipment into account	Mandatory

	• Have an alternative evacuation route planned if space constraints prevent stretcher evacuation by ambulance service along the route through the building used for access	
12.4 Know the importance of the ability to communicate appropriately in rescue situations	Understand that: • Workers must maintain visual contact with each other. If in a two-person team, they must retain visual contact, for example they must not leave the site or work within a building with no visibility of the person on the rooftop A range of communication methods may be used, for example: • Mobile phones, • Two-way radios • Loud speakers • Hand signals It is essential that workers can communicate with each other at all times.	Optional
12.5 Know the types of rescue situations and when radio communications may be used	For example: • A radio system may be essential when working on a large roof when wind noise or equipment would make it impossible to communicate normally • Where there is no mobile phone signal or due to mobile systems being down	Optional
12.6 Know the importance of having suitably trained First Aiders in attendance when people are working at height	Know that: • The first few minutes can be vital to stabilise an injured person. It can be a matter of life or death • The casualty may not be able to be moved to the ground and could be unconscious • The First Aider must act quickly to secure the casualty in a position that avoids suspension syncope from developing • The site could be remote, and the person working alongside the injured party may be the only person immediately able to help	Mandatory

Unit 13 – Suspension syncope awareness

The aim of this unit is to provide individuals with knowledge of the causes and symptoms of suspension syncope, how to minimise its effects, and the importance of a quick response when somebody is suspended in a harness.

- Learning outcomes **13.2, 13.3** and **13.4** are mandatory and must be assessed for this unit.
- Please select **1** optional learning outcome to assess for this unit

Knowledge and understanding

Learning outcomes	Knowledge and understanding	Assessment
13.1 Know the causes of suspension syncope	An understanding that: • The term “suspension syncope” is used to describe the situation of a person falling into suspension in a harness and then becoming unconscious. This is very rare on a ladder • “Syncope” is the “sudden transient loss of consciousness with spontaneous recovery, as may occur with a simple faint." - HSE (Health and Safety Executive), 2008 • A quick response is vital	Optional
13.2 Know the symptoms of suspension syncope	An understanding that: • Typical symptoms include pallor, sweating, shortness of breath, blurred vision, dizziness, nausea, hypotension, and numbness of the legs • Suspension syncope eventually leads to fainting, which may result in death due to oxygen deprivation of the brain	Mandatory

13.3 Know the techniques that can be used to alleviate the onset of suspension syncope	For example • If someone is stranded in a harness, but is not unconscious or injured, and has something to kick against or stand on (such as a ladder rung) it is helpful for them to use their leg muscles by pushing against it every so often, to keep the blood pumping back to the torso	Mandatory
13.4 Know how to position a casualty correctly when they are evacuated to ground level	For a semi-conscious, unconscious, or conscious casualty, the usual rules of ABC and placement in the recovery position apply. • A = Airway – check and ensure the casualty has an open airway • B = Breathing – check to see if the casualty is breathing • C = Circulation – check for circulation/pulse Recovery position – If the casualty is breathing, putting them into the recovery position will help to maintain a clear and open airway and reduces the possibility of fluid or vomit making them choke.	Mandatory
13.5 Know how to handover a casualty to a first aider or emergency services	For example: • It is important to inform the First Aider or emergency services that the person may have suffered from suspension syncope • Inform them of any known medical issues • Inform them if the injured person lost consciousness and estimate how long they were in this state • Inform them how long the casualty may have been hanging • Provide the casualty's personal details	Optional

Unit 14 – Lifting and lowering kit

The aim of this unit is to provide individuals with the knowledge and understanding of what to consider in order to lift and lower kit whilst on a rooftop.

- All **3** learning outcomes are mandatory and must be assessed for this unit

Knowledge and understanding

Learning outcomes	Knowledge and understanding	Assessment
14.1 Know the considerations required when lifting and lowering kit is required	As with any work being undertaken on rooftops it should be planned. A risk assessment should be carried out which considers hazards of the work and the site at which the task/work is being carried out. Specific issues that should be included are: • Weight and size of the load • Capability of individuals for manual lifting • Anchor points for lifting and whether these have been tested under the requirements of LOLER • Drop zone around the work area to take account of falling objects • Radio frequency from antennas • MATS GN-007 – Lifting Equipment onto Roof Tops provides additional guidance	Mandatory
14.2 Know the typical basic equipment required and how to tie them ready for use	The following equipment is a typical lifting equipment bag: • 1x lifting bag, a padded secure bag designed for lifting with capacity deigned for the spares/ equipment • 1x free pulley • 1x snatch pulley	Mandatory

	• 2x short slings for securing to the top hoop (or one long one) • Rope of sufficient length (minimum of 2x ladder height plus 3 metres) and strength, plus the correct size for the pulleys • 3x carabiners • The above is a suggested kit only	

Practical skills

Learning outcomes	Knowledge, understanding and skills	Assessment
14.3 Demonstrate how to tie the bow line knot	The individual must be able to tie the bow line knot	Mandatory

Unit 15 - Demonstrating climbing techniques on fixed ladders

The aim of this unit is to provide individuals with the knowledge, understanding and practical skills needed to be able to demonstrate safe climbing and working at height techniques on fixed access ladders.

- All **7** learning outcomes are mandatory and must be assessed for this unit

Practical skills

Learning outcomes	Knowledge, understanding and skills	Assessment
15.1 Demonstrate the establishment of an appropriate drop zone	For example: • Understanding the size requirements of setting up drop zones at base level • Preventing unauthorised persons from accessing • Understanding that there may be drop zones at 2 levels, on the roof and on the ground • Additional guidance found in MATS GN-013 – Drop Zones	Mandatory
15.2 Demonstrate how to attach to fixed fall systems correctly	For example: • Checking fall-arrest trolley is compatible • Checking fixed fall arrest system is serviceable before use • Correct use of attachment points, for example, to front D-ring • Testing that the device engages before use • Awareness of potential errors	Mandatory
15.3 Demonstrate the correct use of fixed fall systems	For example: • Correct application ensuring trolley is properly engaged on rail or rope • Demonstrate what action to take if trolley snags • Not weighting system by using it for rest etc	Mandatory

	• Pre-use inspection • Attachment points	
15.4 Demonstrate a fluid climbing technique on the ladder with climbing hooks	For example: • Maintaining permanent attachment, to the rungs and not the stiles (unless aluminium or GRP ladder is being used, in which case the instructor will have to talk through the relative benefits of attaching to the stiles) • Lanyard hooks placed above head height where possible, and the secondary attachments at a point in relationship to the body versus the fall distance. Not allowing forces to be greater than 6kn max if the primary was to fail • Minimising fatigue by taking frequent rests	Mandatory
15.5 Demonstrate the ability to put full weight on the work positioning system	For example: • Choking back only when an approved and appropriate choking ring is provided	Mandatory
15.6 Demonstrate confidence when working and moving at height	• Using appropriate speed • Behaving with appropriate calmness	Mandatory
15.7 Demonstrate how to consistently select robust anchor points on the roof top	• Ability to identify good and bad anchor points	Mandatory