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1. Introduction

Working at height is a significant part of work within Eskom Holdings. Working at height is a high-risk activity, and therefore all precautions must be taken to prevent incidents while working at height. It is Eskom's responsibility and commitment to ensure a safe working environment that is in line with its Safety, Health, Environmental and Quality (SHEQ) Policy, along with other legislative obligations.

2. Supporting Clauses

2.1 Scope

This procedure defines the framework that must be followed to ensure that work at height is carried out safely in terms of Eskom's SHEQ Policy and legislative requirements.

2.1.1 Purpose

The purpose of this procedure is to standardise requirements and furnish guidance on issues related to working at height, to ensure the occupational safety and health of personnel while working at height and to avoid risks and hazards.

2.1.2 Applicability

This procedure shall apply to Eskom Holdings SOC Limited and its divisions, subsidiaries, and contractors, where work at height is conducted by or on behalf of Eskom. This procedure and any other applicable legislative requirements are applicable to any work performed above a stable work surface or where a person puts themselves in a position where they are exposed to a fall. Work at height procedures during emergency response operations or rescues shall be exempted from particular requirements contained in the procedure, provided that the operation is conducted by appropriately trained rescue and firefighting teams.

2.2 Normative/Informative References

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

[1] 240-62196227 Life-saving Rules Standard
[2] 240 -62582234 OHS roles and responsibilities and statutory appointments standard.
[3] 32-136 Health, Safety, and Environmental Requirements to be Met by Contractors Contracted to Eskom
[4] 32-107 Eskom Firefighting Training Programme
[5] 32-282 Medical Surveillance Procedure
[6] 32-37 Substance Abuse Procedure
[7] 32-727 Eskom SHEQ Policy
[8] ISO 9001 Quality Management Systems
[9] Occupational Health and Safety Act, Act 85 of 1993

2.2.2 Informative

[1] SANS 50353-2: Personal Protective Equipment against Falls from a Height − Guided-type Fall Arresters on a Flexible Anchorage Rope
[2] SANS 50354: Personal Protective Equipment against Falls from a Height − Lanyards
[3] SANS 50355: Personal Protective Equipment against Falls from a Height − Energy Absorbers
[4] SANS 50358: Personal Equipment for Work Positioning and Prevention of Falls from a Height − Work Positioning Systems
[5] SANS 50361: Personal Protective Equipment against Falls from a Height − Full Body Harness
[6] SANS 50362: Personal Protective Equipment against Falls from a Height − Connectors
[7] SANS 50363: Personal Protective Equipment against Falls from a Height − Fall Arrest System
[8] SANS 50365: Personal Protective Equipment against Falls from a Height − General Requirements for Instructions for Use and for Marking
[9] SANS 50795: Protection against Falls from Height − Anchorage Devices; Requirements and Testing
[10] SANS 50795: Protection against Falls from Height − Anchor Devices; Requirements and Testing
[11] SANS 50341: Personal Protective Equipment against Falls from a Height − Descender Device
[12] SANS 1397: Safety Helmets for Industrial Use and for Firemen
[13] SANS 10085: The Design, Erection, Use, and Inspection of Access Scaffolding
[14] British: The Work at Height Regulations 2005
[15] AS/NZS 1891.4: Industrial Fall-arrest Systems and Devices – Selection, Use, and Maintenance.

2.3 Definitions

Definition	Explanation
Competent person	Means any person who- a) has in respect of the work or task to be performed the required knowledge, training and experience and, where applicable, qualifications, specific to that work or task: Provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualification Framework Act, 2000 (Act No.67 of 2000), those qualifications and that training must be regarded as the required qualifications and training; and b) is familiar with the Act and with the applicable regulations made under the Act;
Employer	Means any person who employs or provides work to any person and remunerates that person or expressly or tacitly undertakes to remunerate him/her.
Fall arrest equipment	Means equipment used to arrest a person in a fall, including personal equipment such as body harness, lanyards, deceleration devices, lifelines or similar equipment.
Fall arrest system	Means personal protection equipment used to create a system to prevent falls from a height comprising a full body harness and a connecting sub-system for fall arrest purposes.
Fall prevention equipment	Means equipment used to prevent persons from falling from a fall risk position, including personal equipment, a body harness, lanyards, lifelines or physical equipment such as guardrails, screens, barricades, anchorages or similar equipment;
Fall protection plan	Means a documented plan, which includes and provides for- a) all risks relating to working from a fall risk position, considering the nature of work undertaken; b) the procedures and methods to be applied in order to eliminate the risk of falling; and c) a rescue plan and procedures
Fall risk	Means any potential exposure to falling either from, off, or into.
Height safety equipment	Any equipment used while working at height and includes the following categories: • Equipment used to work at height, for example, scaffolds, ladders, mobile elevated work platforms, platforms, climbing irons, etc. • Fall prevention equipment • Fall arrest equipment
Medical certificate of fitness	Means a certificate contemplated in Construction Regulation 7(1)(8)

Definition	Explanation
Medical fitness	Medically fit means the person should have a medical certificate of fitness issued by an occupational health practitioner. The person should be free from any disability that may prevent them from working safely at height. This includes, but is not limited to, heart disease, high blood pressure, epilepsy, fits and blackouts, fear of heights, giddiness or difficulty with balance, impaired limb function, alcohol or drug dependence, psychiatric illness, and diabetes.
Risk assessment	Means a process of determining any risk associated with any hazard in order to identify the steps needed to be taken to mitigate, remove, reduce, or control such hazard. A risk assessment is typically a careful examination of what could cause harm to people as a result of a work activity, and it allows one to take the necessary precautions to prevent the harm occurring.
Training records (work at height)	Documented training records that identify the holder as having successfully completed appropriate work at height training and medical fitness and that allow the holder to conduct permitted work, and these must be readily available on site.
Task analysis	Is the systematic examination of all dangerous/hazardous tasks (work) in order to identify and quantify all the potential and existing inherent hazards to which employees are exposed while the task is being executed
Work at height	Any work performed above a stable work surface or where a person puts himself/herself in a position where he/she exposes himself/herself to a fall from or into. Work at height is, as a result, work in any place, including a place at, above, or below ground level, where a person could be injured if he/she fell from that place. Access and egress that present a risk of fall can also be work at height.

2.4 Abbreviations

Abbreviation	Explanation
A&F	Assurance and Forensic
CE	Chief Executive
DE	Divisional Executive
EDC	Eskom Documentation Centre
GE	Group Executive
HR	Human Resources
kN	Kilo newton
OHS Act	Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)
OHSLC	Occupational Health and Safety Liaison Committee
PPE	Personal protective equipment
SETA	Sector, Education and Training Authority
SHEQ	Safety, health, environment, and quality
SOP	Safe Operating Procedure
T&D	Training & Development

2.5 Roles and Responsibilities

Eskom Holdings Limited, its subsidiaries, and contractors shall take all reasonably practicable steps to prevent fall-from-height incidents. The delegated employer, in terms of section 16(2) of the OHS Act, together with appointed responsible managers as in terms of the Roles and Responsibilities and appointments standard (240 -62582234), shall be responsible for safety in its designated area of responsibility. Each division shall, where required, compile appropriate work instruction documents to support this procedure.

2.6 Process for Monitoring

Compliance with the requirements of this procedure must be audited by the operating unit at least annually as part of an internal review process.

All records in terms of paragraph 3 will be audited by Assurance and Forensic Department (A&F) or any person delegated by A&F to carry out the audit and at a frequency determined by A&F.

2.7 Related/Supporting Documents

None.

2.8 Implementation Date

The implementation date of this procedure is June 2014

3. Working at Height Procedure

3.1 General Requirements

3.1.1 Wherever reasonably practicable, preference is given to the performance of work at ground level as opposed to in an elevated position.

3.1.2 Where work in an elevated position is necessary, preference is given to fall prevention measures such as, but not limited to, effective barricading and the use of work platforms.

3.1.3 Persons may only work from a fall risk position if a site-specific fall protection plan is in place and correctly implemented and consists of the following:

- All appointments for the fall protection plan developer and implementer are in place.
- One risk assessment, which is specific and incorporates the working at height risk assessment, as well as the site-specific risk assessment, has been completed for the work to be conducted.
- Safe working procedure/task analysis and work instructions, approved by a competent person, are in place.
- A fall rescue plan, along with necessary equipment and trained rescuers, is in place.
- Appropriate training, as determined by the risk assessment, has been provided.

- Appropriate height safety equipment and personal protective equipment have been issued to the individual.
- There are equipment inspection procedures and up-to-date inspection records.
- Individuals are medically fit to work at height, and records of this are kept.
- A site-specific risk assessment is performed.

3.1.4 While work is in progress, adequate warning signs and/or barricades shall be used in all areas where there is a risk of persons being injured by materials or equipment falling from the work area. Barricades should be continuous and easily visible.

3.1.5 A drop zone shall be established with appropriate warning signs and barrier tape or barricading, warning personnel below of workers above and potential falling objects.

3.2 Organisation and Planning

3.2.1 Every employer shall ensure that work at height is:

a) properly planned;

b) appropriately supervised; and

c) carried out in a manner that is, as far as is reasonably practicable, safe and that its planning includes the selection of work equipment.

3.3 Risk Assessment

3.3.1 A risk assessment allows for careful examination of what could cause harm to people because of a work activity, and it allows one to take the necessary precautions to prevent the harm from occurring.

3.3.2 The following hierarchy of controls has to be observed. It is set out graphically in Appendix 1, Figure 1.

a) When considering work at height, a risk assessment must be conducted, form part of the health and safety plan to be applied on site and must include;

i. the identification of the risks and hazards to which persons may be exposed to;
ii. an analysis and evaluation of the risks and hazards identified based on a documented method;
iii. a documented plan and applicable safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;
iv. a monitoring plan; and
v. a review plan

b) Working at height risk assessments shall take into account factors such as:
- the necessity for the work to be done in an elevated position as opposed to on the ground;
- barricading and other fall prevention measures;
- requirements of the safe work procedure;

- restrictions in fall distances and clearances;
- mobility required for the task, for example, degree of vertical or horizontal movement;
- height being worked at;
- possible injuries;
- duration of exposure;
- frequency of performing these activities;
- type of work and ergonomic considerations;
- work site/area congestion;
- potential/likelihood/causes of a fall occurring;
- endurance of workers;
- risk control measures;
- electrical hazards and safe clearances from overhead power lines;
- structure (ease of access, secure footing, and compatibility with fall prevention and/or fall arrest equipment);
- terrain;
- restrictions with reference to working alone (a rescue must always be executable);
- falling objects; and
- suitable anchor points.

c) Develop approved written safe work procedures/task analysis and work instructions for all elevated work and make them available to all persons carrying out the work. Standard procedures may be suitable for most work; however, unusual conditions or architectural features may require additional site-specific procedures. The person supervising the work must ensure that safe work procedures/task analysis and work instructions are followed at all times.
d) In the design phase, consider fall risks with regard to minimising risk, ease of access, anchor points, and avoidance as far as reasonably practicable.
e) The risk assessment will determine the selection of suitable work at height equipment and systems for the work to be performed safely.
f) Be aware of hazards resulting from adverse weather conditions, and where necessary, modify the work method accordingly.
g) Determine the content and intervals of planned job observations during the risk assessment.
h) The risk assessment must include the rescue plan.
i) Persons working alone should have a practical way of performing a rescue in the event of an incident.
j) Risk assessments must be performed and documented by competent persons. The mitigation process from the risk assessments must influence the content of the fall protection plan.
k) In the case of live work, work has to be conducted according to standards and procedures while maintaining minimum safe working clearance.
l) Take into account the risks associated with objects falling from heights. Tools and equipment must be safely secured and attached to the body or structure

3.4 Fall Protection Plan

3.4.1 A task-/job-specific fall protection plan shall be developed and approved by a competent person for any activity where there is a risk of a fall.

3.4.2 A competent fall protection plan developer must be appointed according to 10(1)(a) of the Construction Regulations.

3.4.3 The fall protection plan shall include a task-/job-specific risk assessment and requirements relating to the following:

- Training programme for employees working from a fall risk position
- Appointments and authorisations
- The procedure addressing the inspection, testing, and maintenance of all fall protection equipment
- A risk assessment that is site-specific with regard to fall risks for work to be performed
- The processes for evaluation of the employees' medical fitness necessary to work in a fall risk position and the records of this (medical surveillance programme)
- Equipment use and specification
- Fall prevention, fall arrest, and fall rescue
- Method statements or safe work procedures/task analysis/work instructions.

3.4.4 The fall protection plan and its requirements shall be integrated into the health and safety plan.

3.4.5 Adherence to the fall protection plan is mandatory. An induction on the fall protection plan must be carried out for all relevant employees.

3.4.6 The fall protection plan must be suitably amended in accordance with the risk assessment, equipment technology, standards, and legislation.

3.4.7 The fall protection plan must be monitored and reviewed as required by the work performed and changes in hazards.

3.5 Training and Authorisation

3.5.1 Every employer shall ensure that no person engages in any activity, including organisation, planning and supervision, in relation to work at height or work equipment for use in such work, unless they are competent to do so or, if being trained, are being supervised by a competent person

3.5.2 All users of height safety equipment for working at height must be trained, assessed and declared competent for the specific height safety equipment and associated structures.

3.5.3 The responsibility for evaluating and accepting accredited instructors to present the basic Fall Arrest System and Rescue Course for both the operating unit's T&D and external instructors resides with the operating unit T&D Departments. The evaluation is done in conjunction with the Divisional National Work at Height Workgroup member.

3.5.4 Prerequisites for assessors and instructors

Assessors and instructors must be;

- Registered group or individual learning facilitator
- Registered assessor with a SETA; and must have
- knowledge of Eskom module "Safe Use of Working from Height Systems"
- relevant minimum experience
- At least one year's experience in the working from height environment
- At least two years in a working from height training environment

3.5.5 Declaration of competency

To be declared competent, all assessors and instructors shall be theoretically and practically assessed in terms of the Eskom module "Safe Use of Working from Height Systems".

3.5.6 Validity of FAS and rescue training

- There shall be no expiry date on official training, but at least one job observation on each user per annum, for example by a peer.
- There shall be no expiry date on the certificate, but only the date of training.
- Evaluation to be conducted every three years by an accredited trainer.

3.5.7 The need for refresher training is determined by the employer, taking into account factors such as period of inactivity and changing circumstances as determined by risk assessments and job observations.

3.5.8 Refresher training/workshops for rescue need to be run on a regular basis, at least six-monthly.

3.5.9 Work at height and rescue training must be provided by Eskom-approved instructors and service providers, taking into consideration the appropriate unit standards. See the Appendix 2 attached for a list of work at height unit standards.

3.5.10 Rescue training, where necessary, includes self-rescue and buddy rescue.

3.5.11 At least two persons per team have to be able to perform rescues if work at height is involved.

3.5.12 All personnel trained to perform rescues will be trained to first aid Level 2.

3.5.13 Documented training records for all work at height training must be maintained.

3.5.14 Only training providers that use competent training providers that are registered against the relevant unit standards will be used.

3.6 Height Safety Equipment

3.6.1 All height safety equipment purchased has to conform to relevant national standards, international standards, statutory requirements, and approved Eskom divisional-specific requirements.

3.6.2 All height safety equipment must comply with an appropriate maintenance, testing, and inspection standard.

3.6.3 Any new or amended specification and/or standard for height safety equipment has to be accepted by the National Work at Height Workgroup.

3.6.4 Any new or amended work at height equipment must first be included in the specification and subjected to a technical assessment by the workgroups mandated by the National Work at Height Workgroup prior to any acquisitions.

3.6.5 Each divisional workgroup must ensure that all height safety equipment in use at the time of this procedure's first issue is assessed and verified for compliance with relevant standards and specifications within six months of the effective date of this procedure.

3.6.6 Replacement of height safety equipment not meeting the relevant standards and specifications has to be completed within 12 months of the effective date of this procedure. The use of a work-positioning belt with a work-positioning lanyard (safety belt) without a full body harness and fall arrest system is strictly prohibited for fall arrest purposes.

3.6.7 The effect on the user should also be taken into consideration: equipment should not place a load greater than 6 kN or as per relevant SANS or accepted international standards on the user in the event of a fall. The equipment should protect the user from impact with the ground or surrounding structures, as well as injury from the harness in the event of a fall.

3.6.8 Expiration dates for FAS equipment as determined/specified must be adhered to during usage and inspections in terms of retirement of equipment and suitability for usage.

3.7 Personal Protective Equipment (PPE)

3.7.1 When working at height, appropriate PPE as determined by the risk assessment and written safe work procedure/task analysis/work instruction has to be used at all times.

3.7.2 All equipment selected must be compatible, for example, not extending a retractable lanyard with another shock absorber or using a small snap hook on an eye bolt.

3.7.3 Equipment selected must be fit for the job and not cause harm to the user in the event of a fall.

3.7.4 Equipment is selected on a risk assessment basis.

3.7.5 The type of personal protective equipment to be used must be appropriate to the activity and provide adequate hand, eye, face, foot, and head protection.

3.7.6 Work restraint methods must be used before placing workers in fall arrest situations.

3.7.7 Once issued to an individual, that particular fall prevention and/or fall arrest system is for the exclusive use and control of that user. A formal issue control system must be implemented that records:

- the condition of equipment when issued;
- the condition of equipment when returned;
- the name and employee number of the user;
- the name and employee number of the issuer;
- the date(s) of issue and return;
- any acceptable repairs carried out; and
- any deployment of the fall arrest system.

3.8 Anchor Points

3.8.1 The selection of anchor points is determined by the type of work and structure involved. On routine jobs, pre-identified anchor points need to be marked and tested as such.

NOTE: certain structures may not provide adequate strength for fall arrest purposes. In these events, alternative means of fall protection need to be developed, based on an appropriate risk assessment.

3.8.2 Dedicated fall arrest anchor points have to be tested annually, according to SANS 50795, and records of this kept as per gear inspection procedures.

3.8.3 Dedicated anchor points need to be clearly marked as such, with the load-bearing capability, direction of use, date of inspection, standard to which it was tested, and unique serial number.

3.8.4 Self-identified anchor points need to be able to withstand the following forces in direction of load:

- **Single-point anchorage:**
  - Fall arrest – one person 15 kN
  - Fall arrest – two persons 21 kN
  - Restraint – one person 6 kN
  - Rope access 15 kN
- **Horizontal lifelines:**
  - **End anchors:**
  - Horizontal forces in system multiplied by a safety factor of 2 and will typically be between 25 and 50 kN.
  - **Intermediate anchors:**
  - Diversion less than 15 degrees – 12 kN;
  - Diversion more than 15 degrees – same as end anchor.

3.8.5 If any doubt exists regarding the structural adequacy of the anchor structure, an engineer will make an assessment and sign off the structure.

3.8.6 Technicians need to be able to connect to anchor points before they enter a fall risk position

3.8.7 Anchor points must, as far as practicable, be placed above a technician to minimise fall distance and pendulum effect.

3.8.8 Rope or webbing anchor slings may not be placed around a structure with sharp edges without adequate protection.

3.8.9 The angle of sling legs around a structure may not exceed 120 degrees.

3.8.10 In vertical or diagonal orientation, the sling must be prevented from sliding through sufficient means, for example, double-wrapping the sling or attaching it to a cross-member – choking is only allowed for slings designed for choking.

3.8.11 Handrails may not be used as anchor points for any fall arrest equipment or fall arrest systems, unless they are specifically engineered and certified to do so (see relevant SANS and OHS Act requirements).

3.9 Safe use of Equipment and Systems

3.9.1 The following general points are applicable to any work where fall arrest is required:

a) The user of fall arrest equipment should be connected to at least one fall arrest system whenever they are at risk of falling.

b) Equipment and systems must be used according to manufacturer's instructions.

c) Equipment must be carefully handled to ensure that no parts are damaged.

d) The user must ensure that the equipment is in good order, serviced, inspected, and maintained before and after use.

e) Defective equipment may not be used and must be removed from circulation, destroyed, marked as defective, or possibly repaired by a competent person.

f) Users must check the correct assembly of the equipment before use, for example, that all buckles are used correctly; no clothing is caught in snap hooks, etc.

g) A particular fall arrest system may only be used if there is sufficient fall clearance.

h) Carrying of hand tools must not interfere with the movement of the operator or the working of the system.

i) Equipment has to be stored in a cool, dry environment away from chemicals.

j) If the equipment has arrested a fall, it must be withdrawn from service and referred for inspection.

3.9.2 Pendulum effect

Certain situations may occur where a fall may result in a pendulum effect or snagging of equipment, which can interfere with the effective working of the system. Appropriate measures need to be put in place to minimise this; for example, attention must be given to the positioning of anchor points, use of diversion anchors, or horizontal lifelines.

3.9.3 Fall over sharp edges

Where lanyards can strike a sharp edge in the event of a fall, it can result in failure to arrest the fall safely or completely break the lanyard. Selection of a different anchor point or protective covering can overcome this.

3.9.4 Fragile work surfaces

a) Avoid work or movement over fragile surfaces as far as reasonably practicable.

b) Provide and use, as far as is reasonably practicable, suitable and sufficient platforms, coverings, guardrails, or similar means of support or protection so that any foreseeable load is supported by such supports or borne by such protection.

c) Where a risk of a person at work falling remains despite the measures taken under point b, take suitable and sufficient measures to minimise the distances and consequences of their fall.

d) Prominent warning notices are, as far as is reasonably practicable, affixed at the approach to the place where the fragile surface is situated, or persons are made aware of the risk by other means if this is not practicable.

e) On fragile surfaces such as roofs, there is a risk of falling through or over the edge. The following needs to be taken into account:

- Potential fall distance – a fixed-length lanyard can cause an unacceptably long fall close to the anchor if the fall is through the surface.
- Fall clearance – the areas around and underneath the surface need to be checked for potential obstructions.
- Sharp edges
- Swing clearance
- The use of walkways, preferably with handrails, is the preferred method of movement over fragile surfaces.

3.9.5 Restraint systems

Restraint systems are suitable for areas where the user can maintain a secure footing without the tensioning of the system or using their hand to do so. Fall arrest systems should be used in the following situations:

- If the user can reach a point where they can fall over an edge.
- If the restraint line can be adjusted in length, resulting in a fall position.
- If the user can fall through a fragile surface.
- Any other reasonable misuse of the system that could result in a free fall.

Where restraint systems are in place, adequate controls and supervision must be in place to prevent the misuse of the system.

3.10 Work Platforms and Access to Work Areas

3.10.1 Make sure that access to work areas does not present any fall hazards, for example, open holes or fragile surfaces.

3.10.2 Select the correct means of access to the work area, taking into account the job requirements; for example, use podium ladders instead of normal ladders for light work of short duration, use a scaffold to create a safe work platform for a longer job duration and heavier work, and use rope access instead of a scaffold for jobs of shorter duration.

3.10.3 Make sure the operator, for example, a mobile elevated platform operator, of the access equipment is properly trained in the use of the equipment.

3.10.4 Every work platform or means of access or egress at height must:

a) be stable and of sufficient strength and rigidity for the purpose for which it is intended to be or is being used;

b) where applicable, rest on a stable, sufficiently strong surface;

c) be of sufficient dimensions to permit the safe passage of persons and the safe use of any plant or materials required to be used and to provide a safe working area, having regard to the work to be carried out there;

d) possess suitable and sufficient means for preventing a fall;

e) possess a surface that has no gap:

   i. through which a person could fall; or

   ii. through which any material or object could fall and injure a person;

f) be constructed, used and maintained in a condition to prevent, as far as is reasonably practicable:

   i. the risk of slipping or tripping; or

   ii. any person being caught between it and any adjacent structure;

g) where it has moving parts, be prevented by appropriate devices from moving inadvertently during work at height;

h) be so erected and used as to ensure that its components do not become accidentally displaced so as to endanger any person;

i) when altered or modified, be so altered or modified as to ensure that it remains stable; and

j) be dismantled in such a way as to prevent accidental displacement.

3.10.5 A working platform and any supporting structure may not be loaded to the point where it presents a risk of collapse or any deformation that could affect its safe use.

3.10.6 Scaffolding may be assembled, dismantled, or significantly altered only under the supervision of a competent person and by persons who have received appropriate and specific training in the operations envisaged, which addresses specific risks that the operations may entail and precautions to be taken and, more particularly, in:

a) understanding the plan for the assembly, dismantling, or alteration of the scaffolding concerned;

b) safety during the assembly, dismantling, or alteration of the scaffolding concerned;

c) measures to prevent the risk of persons, materials, or objects falling;

d) safety measures in the event of changing weather conditions that could adversely affect the safety of the scaffolding concerned;

e) permissible loadings; and

f) any other risks that the assembly, dismantling, or alteration of the scaffolding may entail.

3.11 Inspection, Care, and Maintenance

3.11.1 All fall prevention and/or fall arrest equipment must be uniquely marked and/or numbered and registered in a statutory and/or approved maintenance register for inspection, testing, and maintenance.

3.11.2 Only competent persons are allowed to inspect, test, and maintain fall prevention and/or fall arrest equipment.

3.11.3 The inspection by the competent person may not replace the inspection that must routinely be performed by the user prior to using the equipment.

3.11.4 Where a user suspects that fall prevention and/or fall arrest equipment is unsafe, the equipment must immediately be withdrawn from service and inspected by a competent person.

3.11.5 Where an inspection carried out by a competent person reveals that an item is unsafe to use, that item is withdrawn from service immediately and either repaired to original specification by the supplier or approved agent or destroyed.

3.11.6 After a fall arrest system has been activated/operated, it is removed from service until it has been inspected and recertified as safe for use by the manufacturer or the authorised agent.

3.11.7 All fall prevention and/or fall arrest equipment must be transported and stored as per the manufacturer's specifications.

3.11.8 No fall prevention and/or fall arrest equipment may be painted and/or defaced or modified in any way without the prior approval of a competent person.

3.11.9 The life expectancy given by the manufacturer must be adhered to.

3.11.10 The surface and every parapet, permanent rail, or other such fall protection measures of every place of work at height must be checked on each occasion before the place is used.

3.12 Duties of Persons at Work

3.12.1 Every person must, where working under the control of another person, report to that person any activity or defect relating to work at height that they know is likely to endanger their safety or that of another person.

3.12.2 Every person must use any work equipment or safety device provided to them for work at height by their employer or by a person under whose control they work in accordance with any training in the use of the work equipment or device concerned that has been received by them.

3.13 Falling Objects

3.13.1 Suitable steps must be taken to prevent any material or objects that could cause harm to people or property from falling.

3.13.2 Where it is not reasonably practicable to comply with the requirements of paragraph 3.13.1, every employer must take suitable and sufficient steps to prevent any person from being struck by any falling material or object that is liable to cause personal injury.

3.13.3 No material or object shall be thrown or tipped from height in circumstances where it is likely to cause injury to any person.

3.13.4 Materials and objects must be stored in such a way as to prevent risk to any person arising from the collapse, overturning, or unintended movement of such materials or objects.

3.14 High-risk Areas

High-risk areas are:

a) where a workplace contains an area in which, owing to the nature of the work, there is a risk of any person at work:

i. falling a distance; or

ii. being struck by a falling object;

iii. sustaining personal injury; the workplace is as far as is reasonably practicable equipped with devices preventing unauthorised persons from entering such area; and

b) such area is clearly indicated.

3.15 Disposal of Height Safety Equipment

There must be a divisional and/or business unit work instruction for the disposal and/or destruction of all withdrawn height safety equipment that cannot be satisfactorily repaired as per 3.11.5.

3.16 Medical Fitness

a) "Working at height" must be indicated on all job specifications of employees expected to work at height and taken into account in all medical assessments/surveillances.

b) It is a prerequisite for workers to be medically fit to work safely in a fall risk position or similar environment, and as proof of this, those workers have to be in possession of a medical certificate of fitness.

c) Where applicable, medical certificates must indicate any restrictions and/or cautions with respect to a person's ability to work at heights. This may be in the form of a recommendation or an absolute prohibition.

d) A medical certificate must be issued by and occupational health practitioner and is only valid for one year.

4. Acceptance

This document has been seen and accepted by:

- B2B Steering Committee
- OH&S Steering Committee
- Work at Height Workgroup

5. Revisions

Date	Rev.	Compiler	Remarks
September 2008	0	Development team	A procedure with reference number 32-418 was developed in alignment with the Eskom documentation requirements.
January 2014	1	Tebogo Mabeleng	Revision of an existing document.

6. Development Team

The following people were involved in the development of this document:

- Robin Pillay (Sustainability Systems)
- Tebogo Mabeleng (Sustainability Systems)
- Work at Height Workgroup members

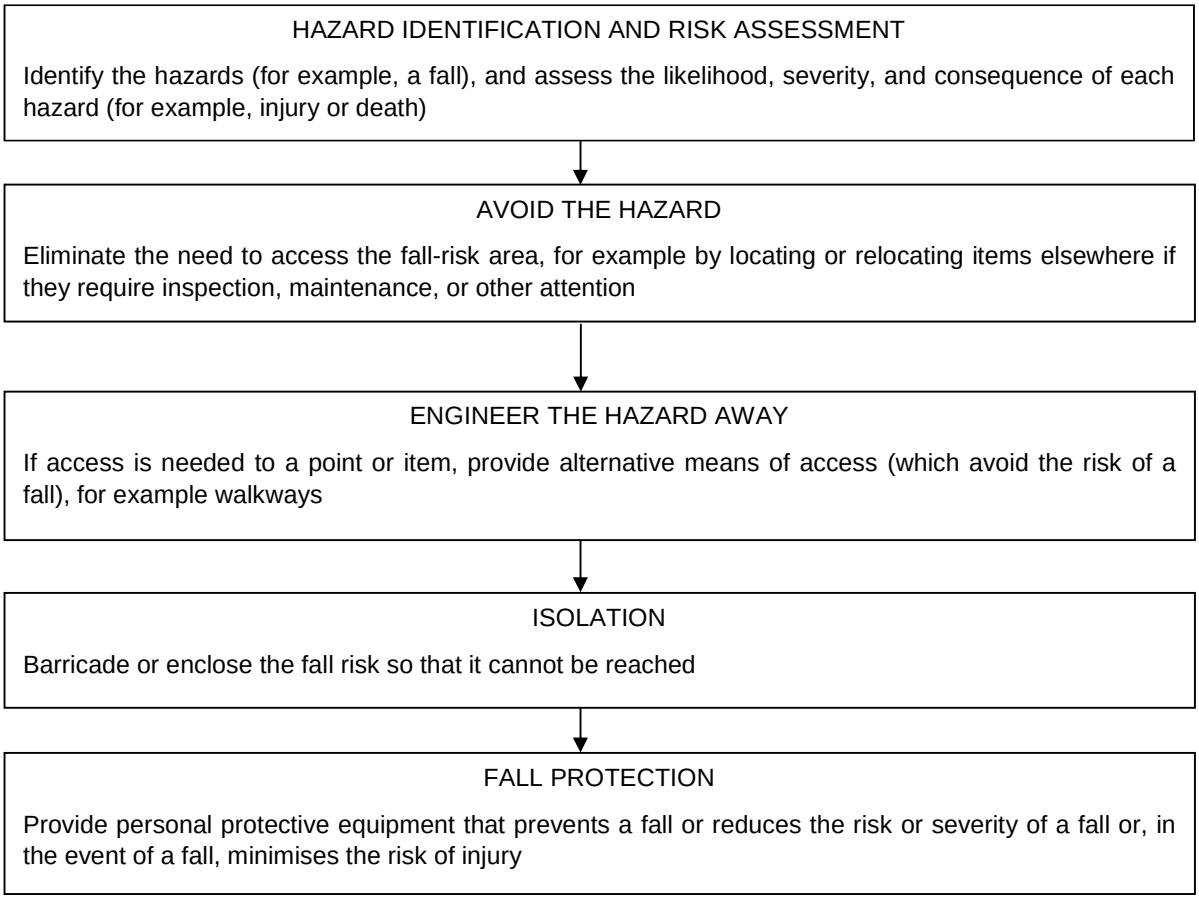
7. Acknowledgements

Not applicable.

Appendix 1: Hierarchy of control

The following hierarchy of control has to be followed when dealing with work at height risk assessment, mitigation procedures and equipment selection.

Figure 1: Hierarchy of risks for people working at heights



*(**NOTE:** the most preferable control appears at the top and the least preferable at the bottom.)*

Appendix 2: Registered work at height unit standards

- **229998:** Explain and Perform Fall Arrest Techniques when Working at Height
  This unit standard is the minimum requirement for anyone working at height using fall arrest equipment.
- **229995:** Install, Use, and Perform Basic Rescues from Fall Arrest, and Implement the Fall
  This unit standard is for anyone requiring the performance of a basic rescue or having to implement a fall protection plan, install lifelines, or supervise a team working at height.
  229994: Assess Work Site for Work at Height, and Prepare a Fall Protection Plan
  This unit standard is to prove competence for the appointed 8.1(a) fall protection plan developer.
  229999: Perform a Range of Advanced Fall Arrest Rescues
  This unit standard is for anyone involved in more advanced work at height rescue procedures.

The following unit standards are all related to persons performing rope access:

- **229997:** Select Equipment and Rig Ropes for Rope Access
- **230000:** Perform a Limited Range of Roped Access Tasks and Rescues
- **230001:** Supervise Rope Access Teams, and Perform Advanced Manoeuvres and Rescues

Appendix 3: Guidelines for safe use of ladders

- Use the correct ladder for the job.
- Use only industrial ladders; do not use domestic ladders.
- Examine ladders for defects and damage before use.
- Keep a ladder inspection record.
- Ladders should be adequately supported at the base.
- Ladders should extend at least one metre above the access level.
- Ladders should be firmly secured or tied off or held firmly by another person.
- The ties should be attached to the stiles of the ladder and not the rungs.
- A ladder should not be “walked” by the person standing on the ladder.
- Ladders should be long enough to enable the job to be done safely.
- There should be one person on a ladder at a time, with three body limbs on the ladder at all times.
- Do not climb higher than the third rung from the top of the ladder.
- Only work on a job within easy arm’s reach of the ladder.
- Ladders (other than trestle ladders) should not be used to support planks as a work platform.
- Metal ladders or wire-reinforced ladders must not be used where electrical hazards exist.
- Climb and descend facing the ladder, maintaining three points of contact, with the hands gripping the stiles or each rung.
- Do not carry anything in your hands when climbing or descending.
- Do not place ladders in vehicle or pedestrian traffic areas.
- Long and heavy ladders (greater than 20 kg) should be handled by at least two people.
- Stepladders should only be used in the fully open position.
- Wear slip-resistant footwear when using ladders.
- Clean off footwear and ladder rungs before using the ladder.
- The ladder must be fitted with non-skid devices at the bottom ends and hooks or similar devices at the upper ends of the stiles, which shall ensure the stability of the ladder during normal use.
- Use ladders only for light and short-duration jobs.
- Place the ladder at a slope of 1:4; a 4 m ladder must be 1 m away from the structure at the base.
- Do not overreach while on ladders.
- Where possible, use a separate fall arrest system, for example, a temporary lifeline.
- Users must be trained and competent in the use of ladders.
- Ladders used must comply with GSR 12(a).

Appendix 4: Scaffolding

Assembling and dismantling of scaffolding and of suspended scaffold

Scaffolding may be assembled, dismantled, or significantly altered only under the supervision of a competent person and by persons who have received appropriate and specific training in the operations envisaged, which addresses specific risks that the operations may entail and precautions to be taken and, more particularly, in:

a) understanding of the plan for the assembly, dismantling, or alteration of the scaffolding concerned;
b) safety during the assembly, dismantling, or alteration of the scaffolding concerned;
c) measures to prevent the risk of persons, materials, or objects falling;
d) safety measures in the event of changing weather conditions that could adversely affect the safety of the scaffolding concerned;
e) permissible loadings; and
f) any other risks that the assembly, dismantling, or alteration of the scaffolding may entail.

1.1 A fall protection plan, including rescue plan, must be in place.
1.2 All scaffolds used must be designed and erected according to SANS 10085.
1.3 All scaffold erecters and users (where applicable) must have received fall arrest training.
1.4 Use the risk assessments to determine the correct fall arrest equipment to be used on scaffolding.
1.5 All scaffolds are to be signed off before use (SANS 10085).
1.6 If a scaffold structure is not safe for use or incomplete, it must be clearly marked as such.
1.7 Use double lanyards with large scaffold or pylon hooks to fit over scaffold structures.
1.8 Attachment of the lanyard hooks to the structure must start once the scaffold erector or user reaches the maximum height before fall arrest systems must be utilised. The height is usually 2 m from the feet to the ground or platform.
1.9 Only attach (hook up) to supported or fixed scaffold structures/members.
1.10 Tall scaffolds may collapse or fall over if not secured, especially if subjected to a dynamic force (of a faller). Always secure the scaffold to the main construction or building or through use of stay wires.
1.11 Attach lanyard hooks above the user's head, or use a retractable fall arrest device or temporary vertical safety line that is attached above the user's head. A fold-back-type lanyard, which can be shortened, is better than a fixed-length lanyard.
1.12 Use the correct length of lanyard for the task.
1.13 Drop zones/exclusion zones must be established, with proper warning signs, barricading, and guardrails.
1.14 The attachment of tools with lanyards and safe rigging systems are vitally important around the scaffolding area.
1.15 Find out whom to notify if any defects need to be remedied or modifications need to be made, and keep them informed.

Correct use of installed scaffolding

1. All scaffolds are to be signed off as "safe to use" before use as per SANS 10085.
2. A rescue as determined by the risk assessment must be in place.
3. If a scaffold is a fully boarded and guarded scaffold with stairs instead of ladders, workers need not be expected to wear personal fall arrest equipment in addition (based on the pre-task risk assessment).

4. If the pre-task risk assessment identifies risks/hazards of overreaching or falling, the user must use the correct fall arrest system.
5. Where fall prevention equipment is not practical, for example, guardrails cannot be provided on scaffolding, the use of fall arrest equipment must be employed.
6. Scaffolding may not be altered or modified without the permission of the erectors; scaffolding needs to be inspected and signed off after any alterations.

Recommendations for the safe use of scaffolds

- A scaffold should only be placed in service after it has been formally handed over by the erection crew and on receipt of a handover certificate.
- The scaffold should be checked for alterations or removal of planks, toe boards, and guardrails before use.
- The scaffold should be checked for clearance from nearby power lines prior to its erection.
- Mobile scaffold wheel lock nuts should be engaged before people work from the scaffold.
- Persons should leave a mobile scaffold before the scaffold is moved.
- The path of travel of a mobile scaffold should be checked for electrical and other hazards such as excavations before it is moved.
- Workers should only climb scaffolding from designated areas on the structure or on properly installed ladders.
- Workers should practise good climbing techniques, including facing the rungs when climbing up or down and using tool belts or other approved methods to carry materials up to the job site, thus allowing the use of both hands.

Appendix 5: Guide for safe use of MEWPs (mobile elevated work platforms)

Operators of MEWPs must observe the following:

1) Conduct a risk assessment in the work environment prior to operating a MEWP, and able to eliminate or minimise any risks that could be present.

2) Conduct a walk-round inspection of the MEWP using a check sheet to ensure that the MEWP is in a safe working condition.

3) Conduct a full function test with the aid of a check sheet to ensure that the MEWP is fully functional and is fit for use.

4) Be familiar with all the controls, be capable of operating the MEWP correctly, and hold a certificate of competence for operating MEWPs.

5) Conduct shutdown and stow procedures as required by the SOP of the specific company and the recommendations of the manufacturer of the MEWP.

6) Avoid overreaching.

7) Only use the MEWP according to the manufacturer's recommendations.

8) Must be trained in emergency procedures relating to the MEWP.

9) Must use a full body harness and shock-absorbing lanyard to connect to the anchor point in the MEWP.

10) Ensure that the operating surface for the MEWP is level, stable, and free from obstructions.