

ATC Health, Safety and Environmental Contractors Compliance Manual

CEO's Foreword

This Manual is designed to promote one of our critical mission statements, which is to deliver the highest level of customer service while providing safe, compliant and quality tower sites.

At ATC South Africa, the health and safety of our workers, contractors, and customers is paramount to our operations. We believe in comprehensive training, rigorous safety protocols and a proactive safety culture that encourages everyone to take ownership of their own safety and the safety of others.

Additionally, it is critical for us to continuously explore sustainable practices and technologies to protect and preserve the environment. Whilst we operate in compliance with applicable laws, regulations, and industry standards related to health, safety, and the environment, our commitment extends beyond minimum requirements as we strive for excellence in HSE performance.

Building a culture of HSE excellence requires the active participation and engagement of every member of our team, our contractors and our customers. We encourage open communication, sharing of ideas and concerns, and collaborative problem-solving to ensure a safe and environmentally responsible work environment.

I invite you to utilise this manual as a guideline as we strive for this excellence in HSE.



Chief Executive Officer

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Introduction

This manual contains management programs, work practices and field execution work processes that Contractors must comply with during the execution of work on ATC South Africa® (hereinafter referred to as ATC) sites. The manual reflects ATC standard requirements and serves as a basis for HSE regulatory compliance. Compliance with this manual does not relieve the Mandatary of its obligation to comply with all applicable laws and revisions thereto governing HSE requirements in South Africa.

The Contractor takes sole responsibility for implementing and complying with ATC's HSE requirements. The Contractors shall ensure that their managers, supervisors, workers and subcontractors assigned to ATC projects receive training on the contents of this manual.

It is expressly understood that Contractors shall perform site-specific project risk assessments to identify hazards and impacts and shall develop appropriate mitigation/control strategies to address identified hazards and impacts to safeguard its workers, authorized ATC representatives, the public and environment while performing work on ATC sites.

Contractor Selection

2.1 Review of Qualification and Competencies

Prior to subcontracting work, ATC shall consider the qualifications and competencies of prospective Contractors, including but not limited to training, safety programs, past safety performance and current supervisor qualifications/experience. The Contractors shall meet all minimum requirements as described in this manual and other applicable ATC contract documents.

As a contractual requirement for conducting work on behalf of ATC, Contractors shall be requested to adopt and implement the HSE Program aligning to legal requirements and the requirements of this manual.

2.1.1 Project Kick-off / Pre-Mobilisation Meeting

Before site mobilisation, a meeting shall be held between the Contractor and subcontractors (where applicable) to review specific HSE related aspects of the ATC site, scope of work, and any questions that may arise regarding the contractual safety requirements. Records of this induction shall be kept in the site safety file for audit purposes.

2.2 Strategic Initiatives

The Contractor is responsible for developing HSE programs that provide clear work instructions. The Contractor shall manage and ensure implementation of the program.

Typical HSE organisation activities include:

- Providing HSE advice at all levels of the organisation.
- > Ensuring that technical HSE resources are available.
- > Establishing and maintaining HSE competence requirements and programs.
- > Ensuring implementation of the HSE program.
- Continually assessing hazards and impacts and developing work execution plans as part of the mitigation and risk control strategies.
- > Ensuring that HSE audits are conducted, and corrective actions implemented.
- Monitoring and disseminating information on local HSE regulatory requirements.
- > Planning for and supporting emergency response plans and procedures.
- > Supporting incident reporting and investigation procedures.
- Measuring and communicating HSE performance.
- Monitoring and assessing assigned subcontractors' HSE performance.
- Informing ATC regarding significant HSE hazards, impacts, incidents (actual or potential) or unsafe conditions.

2.3 The HSE Management Process

The Contractor shall effectively manage HSE matters related to its activities in accordance with the HSE management process for the length of the project.

The process follows the continuous improvement model of **PLAN-DO-CHECK-ACT**.

Planning Stage

The "planning" stage involves identifying project hazards and impacts informed by the scope of work and designing management programs including controls to mitigate hazards and impacts.

Doing Stage

The "doing" stage involves implementing controls including safe work procedures over project activities to ensure that the behaviours/hazards/aspects of a project are properly mitigated and managed.

Checking Stage

The "checking" stage involves application of monitoring and evaluation techniques to assess compliance status with the HSE program. The techniques applied include but are not limited to site audits, assessments, inspections, investigations, safety talks and job observations. Records of HSE program monitoring and evaluation should be archived in the site safety file.

Acting Stage

The "acting" stage involves reviewing the HSE performance of the project and making any changes to ensure that the HSE program remains effective. The Contractor is responsible for implementing an HSE management system that complies with the concepts described above and ensures that at-risk behaviours/hazards/impacts are identified, eliminated or mitigated to avoid adversely affecting the health and safety of workers executing tasks on ATC sites or the community located in the vicinity of ATC sites.

This process affords Contractors an opportunity to demonstrate continuous improvement in HSE performance.

Roles, Responsibilities & Authority

3.1 Contractor

The Contractor is responsible for setting up and managing the HSE program to enable project managers, supervisors, workers, and assigned subcontractors to know what is expected of them. ATC permits contractors to engage in a <u>single tier of subcontracting</u>. This means that Contractors are allowed to subcontract their work to another party, but this subcontractor is not permitted to further subcontract the work.

Contractors working on ATC sites shall be held accountable for meeting these responsibilities.

The Contractor must demonstrate, through clear actions, a strong commitment to safety throughout all phases of the project. The Contractor working on ATC sites is solely responsible for implementing their HSE program aligning with legal requirements and the requirements of this manual.

The Contractor must ensure that:

- HSE policies and procedures are communicated, enforced, and reinforced for all their workers including assigned subcontractors working on ATC sites.
- Reasonably practicable HSE conditions are maintained throughout the project complying with all applicable laws and other related requirements.
- Necessary measures are implemented to ensure workers are competent to perform assigned work including but not limited to training in health and safety appropriate to assigned work.
- This manual is included as a contractual requirement for all subcontractors assigned to ATC projects.
- Adequate resources are allocated to fully implement the HSE program.
- Its workers are educated about the specific hazards and impacts related to the project scope of work.
- > Site specific risk assessments are conducted to ensure that appropriate control measures are implemented to safeguard workers' health and safety prior to work.
- HSE control measures are established to eliminate, isolate, or minimise exposure of all workers.
- Regular inspections of work areas are conducted to identify hazards and impacts, including areas of non-compliance, and to ensure corrective action is taken.
- > HSE is integrated into the work plan prior to starting site construction activities.
- The correct tools and personal protective equipment (PPE) are provided for each job.
- Tools and equipment are checked before issue, are free of defects, and carry current certifications as required.
- Reports and records are provided to ATC to document incidents (LTIFR data) where they occur or there was a high potential for an incident to occur.

- Other necessary safety performance reports are provided to ATC, as and when required.
- HSE information issued by ATC is reviewed, applied and disseminated internally and to subcontractors working on ATC projects.

Note

The Contractor shall remain available to oversee, and address assigned subcontractor HSE matters that develop during the execution of work even after their own activities at that same site have been completed.

3.2 Supervisors

Supervisory workers must provide leadership and guidance, maintain communication, cooperation, and teamwork for their assigned workers. Supervisors must implement procedures, provide instructions for safe and efficient work execution, ensure that risk assessments, emergency preparedness, and HSE safety procedures are observed and conducted prior to start of and during any construction work.

Contractor Supervisors are responsible for:

- > Cooperating and participating in HSE audits and assessments conducted by ATC.
- Actively participating in daily documented risk assessments. The Supervisor must conduct and document a daily review of the work assignments, the hazards and impacts associated with each job, and the measures necessary to protect against and/or mitigate the identified hazards and impacts.
- Ensuring that Contractor workers are informed of the requirements of the HSE program regarding their respective roles and responsibilities.
- > Establishing an adequate safety interface between other Contractors, enabling the project to function safely, productively, and harmoniously.
- > Ensuring regular monitoring and auditing of Contractor work areas to maintain acceptable HSE performance and best practice requirements.
- Participating in planning, scheduling, safety inductions and talks that may be held by ATC. In addition, Contractors are required and responsible for disseminating any pertinent HSE information from those interactions to workers and subcontractors.

3.3 HSE Representative / Officer

Contractors shall designate a full/part-time HSE officer or representative who shall be responsible for monitoring HSE matters related to construction work.

This representative shall be responsible for:

- Responding to safety concerns and requirements.
- > Conducting periodic HSE site audits, risk assessments and/or inspections.
- Monitoring project compliance with applicable HSE requirements.
- Providing education and advice to project workers and subcontractors on HSE legislation and activities.
- > Providing information to project workers regarding site emergency procedures.
- > Monitoring compliance with fire prevention and protection requirements.
- Conducting and participating in HSE meetings, incident investigations, reporting and follow- up.
- Supplying information necessary to maintain the site HSE communication system by developing and distributing safety notices, instructions, etc.

3.4 Contractor Workers

The Contractor workers are responsible for:

- > Always working safely to protect themselves, fellow workers and the environment.
- Learning, abiding by and cooperating with HSE rules and procedures applicable to their work tasks.
- Reporting substandard practices or conditions to their supervisor, e.g., unsafe acts, unsafe conditions or incidents.
- > Attending HSE inductions, talks and awareness sessions, as needed.
- > Participating in the identification, elimination and mitigation of hazards and impacts.
- Correcting or initiating corrective actions for all unsafe acts and conditions.
- Knowing that any worker who neglectfully jeopardises his/her health and safety or the health and safety of others shall be subject to disciplinary action up to and including removal from the project.

3.5 HSE Leadership Behaviours

3.5.1 Safe Working Environment

The Contractor shall strive to provide a safe working environment by encouraging two-way communication between management, supervisors and workers, by facilitating an atmosphere of trust, by listening to workers' suggestions and challenges and by taking appropriate steps without reprisals.

The Contractor should recognise that worker behaviour alone cannot guarantee a safe environment.

The Contractor shall provide a workplace free from recognised hazards and continue to educate and coach workers to avoid at-risk behaviours.

Note

Proactive HSE leadership behaviours demonstrated daily by project managers and supervisors are critical to the successful implementation of the HSE program on ATC sites.

3.5.2 Leadership Behaviour

The Contractor shall take a proactive approach to injury prevention that focuses on reducing at-risk behaviour and increasing safe behaviour that can contribute to injury prevention.

3.5.3 Managing Behaviours

The Contractor understands that more than 80% of injuries are caused by at-risk behaviours (unsafe acts) and therefore shall place emphasis on at-risk behaviour reduction strategies.

Contractors shall focus on behaviours by ensuring supervisors and workers:

- > Investigate and evaluate the connection between at-risk behaviours and injuries.
- Reduce occurrences of at-risk behaviours (e.g., free tower climbing).
- Identify and reinforce safe behaviours.
- > Remove obstacles that prevent safe behaviours (listen and respond to worker concerns).
- > Increase worker involvement through listening, responding, and consider reinforcing behaviours through incentives and recognition as appropriate.

3.5.4 Workers and Supervisors

To help reduce at-risk behaviours, supervisors and workers shall focus on the following safe behaviours:

- > Wearing personal protective equipment (PPE) whenever required.
- > Staying out of the line of fire e.g., working under suspended loads.
- Avoid talking on cell phones while driving.
- > Keeping eyes on the path (e.g., while walking, driving and climbing).
- > Securing tools (with lanyards or equivalent) while working in elevated positions.
- Maintaining a safe distance from antennas to prevent over-exposure to electromagnetic fields (EMF).

Competence

Contractors are responsible for ensuring that workers are competent for their assigned work activities including any specialised training or education recommended by applicable manufacturers and/or suppliers, prior to performing work. All training and education shall be documented and available for ATC's review as part of the HSE program submission upon request prior to commencement of work.

Instructors conducting required courses shall be competent as required by the South African Qualifications Authority (SAQA) or equivalent.

The following HSE competence shall be provided to workers working on ATC projects:

4.1 Speciality and/or Regulatory HSE Competence

The Contractors shall ensure that workers are provided with the appropriate competence and instruction applicable to their assigned work tasks. Competence required for the performance of dangerous or unfamiliar tasks and regulatory mandated courses shall be completed before any worker performs such work tasks. Regulatory competencies shall include, but not be limited to, topics such as first-aid/CPR, basic firefighting, legal liability, scaffolding and fall protection. Contractors shall ensure that courses are conducted by a person qualified in the subject matter by experience and education.

The Contractors shall ensure competence to enable the representative fulfilling the Health and Safety role to proficiently carry out the required HSE responsibilities.

Training and/or education should be conducted prior to assignment of duties on ATC sites.

4.2 Hazard and Impact Identification Competence

Contractors shall ensure that each supervisor is competent to conduct and lead the workers in conducting site hazard and impact identification and risk assessments.

4.3 HSE Meetings and Communication

Contractors shall conduct regular HSE meetings. These meetings should address current and specific work activities including associated hazards and impacts, especially those newly identified as the project continues, mitigation strategies, site incident statistics, investigations conducted, HSE awareness (address relevant topics), etc. Attendance should be made mandatory for all Contractor workers and should be documented. Records shall be kept in the site safety file.

4.4 Tower Climber and Rescue Competence

The Contractor shall ensure that workers required to climb structures and work in elevated positions where there is any fall risk, have successfully completed a Fall Arrest, Rope Access or equivalent course prior to being assigned to ATC projects. The Contractor must issue a Fall Protection Plan and reiterate the application of 100% fall protection techniques.

Note

"Free Climbing" is prohibited on ATC sites.

4.5 HSE Orientation for Supervisors

Contractors shall provide supervisors assigned to ATC projects with an HSE orientation. This orientation shall outline the supervisor's daily HSE roles, responsibilities, and expected leadership behaviours.

The Contractor workers who work on ATC sites shall attend an HSE orientation conducted by the Contractor. This orientation shall provide Contractor workers, including assigned subcontractors, with knowledge of the ATC HSE requirements, as well as the Contractors' own HSE requirements.

The induction scope shall include the workers' tasks, the health and safety hazards and environmental impacts associated with those tasks, and the appropriate measures to be taken to isolate and/or mitigate identified hazards and impacts.

4.6 Hazardous Material

Where applicable, workers shall be competent to:

- Identify the hazardous properties of materials they work with.
- Know where to get information concerning potentially hazardous materials they are required to work with.
- Be able to use Material Safety Data Sheets (MSDS's), when necessary.
- Adhere to approved emergency procedures for any potential spillage. Subject to the scope of work requirements, this procedure shall be submitted with the HSE program for review by ATC prior to work commencement.

4.7 Driver Safety

Each Contractor worker assigned to drive a vehicle on any ATC project must possess a valid driver's license for the vehicle they operate and receive instruction concerning vehicle inspection and safe driving prior to operating the vehicle.

The following ATC driving rules and regulations should always be enforced:

- Only use fit for purpose vehicles and trailers.
- Only allow competent drivers to drive vehicles.
- Never exceed the speed limit or travel at speeds which are dangerous for the type of road, vehicle or conditions.
- > Always wear seat belts when traveling in or operating vehicles.
- Never carry passengers together with tools/equipment in the load bays of vehicles or trucks.
- Never drive under the influence of illegal substances or where it impairs your ability to drive safely.
- Always use a helmet when travelling on a motorcycle.
- Never use a handheld device whilst driving. Only make calls or text by pulling over or using a hands-free device when it's safe to do so.
- Plan all journeys longer than 350km in advance. Ensure a maximum of 8 hours total driving time within 24 hours, with a mandatory rest of 15 minutes every 2 hours. Also ensure a minimum of 6 hours continuous rest within the same 24 hours period.
- Always check the condition of the vehicle before you start a journey, e.g., worn tyres can cause fatal vehicle accidents.
- › Always be mentally and physically rested prior to driving a vehicle.
- > Ensure that you are paying close attention to your environment and be observant to surrounding risk conditions.
- Check all trailer hinge and safety mechanisms, to ensure that they will not come loose during towing.

4.8 Motorised Equipment Operator Competence

The Contractor shall provide the necessary regulatory training or education for workers who operate motorised equipment, including but not limited to mechanical lifting devices, lifting machines and earth moving machinery.

4.9 Non-English Speaking Workers

It is the responsibility of Contractors to ensure that HSE courses and instructions are provided in the language spoken by workers to ensure comprehension.

Communication, Correspondence and Record Keeping

5.1 Contractors Project Kick-off Meeting

- For specified projects, upon award of work, Contractor and supervisory workers shall attend a kick-off meeting, where ATC HSE requirements and expectations shall be discussed and agreed upon with the Contractor.
- All regulatory related queries (stemming from complaints, request for inspections, etc.) shall be documented and reported to the ATC project manager immediately upon notification and/or receipt.

5.2 HSE Documentation / Record Keeping Requirements

Contractors shall maintain (electronically or manually) in line with legal requirements:

- A copy of the OHS Act 37.2 Mandatary Agreement and Principal Contractor Appointment.
- Workman's compensation Letter of Good Standing.
- A copy of the Contractors HSE program.
- Records of all worker competencies (including medical competencies) informed by scope of work agreed upon between ATC and the Contractor and according to this manual's requirements.
- Copies of all HSE forms that are required to be filled out by the Contractor before or during contract work (work permits, planning, etc.).

5.3 Site Information / File

Contractors shall maintain available for inspection on site (via binder, or appropriate electronic means) and make available to all subcontractors and workers:

- Daily risk assessments for the current activities being performed.
- Copies of tower climber competencies.
- > Incident reporting and investigation documentation for the project.
- > Emergency procedures including emergency contact details, etc.

5.4 HSE Site Talks

Contractors shall ensure that each supervisor conducts regular HSE talks with workers on the project. These talks should cover among other topics messages/lessons learned that are applicable to the work being performed. Records of these meetings, the topics discussed, and the names of the attendees shall be maintained on site.

Contractor Management

6.1 Audits and Assessments

Audits and assessments provide Contractors with an effective method of measuring the level of compliance with the Contractors HSE program. Audit and assessment reports identify HSE improvement opportunities and help define preventative and corrective measures.

ATC Audits and Assessments

- Contractors shall be audited annually by ATC, based on legal compliance and compliance with ATC specification.
- > ATC Service Delivery teams shall conduct periodic site audits, assessments, inspections and manage site HSE non-compliance.
- The Contractor shall ensure that its workers cooperate and participate during ATC site audits, assessments and inspections.

Non-Compliance

If, while conducting an audit, assessment or inspection, or in the normal course of monitoring subcontractor work activities, the Contractor identifies a significant or repeated violation of HSE requirements or an imminent dangerous situation, the Contractor shall take the necessary steps to ensure compliance with HSE requirements.



Contractors must address nonconformities within set timelines to avoid further consequences.

Site Processes

7.1 Safe Work Planning

These processes may be a requirement for implementing the HSE program on ATC Sites.

Specific processes to be implemented during site works shall be informed by the hazards and risks identified and by the agreed scope of work between ATC and the Contractor.

These processes reflect ATC requirements, industry best practices, regulatory requirements and provide protection to workers, visitors, and neighbouring communities.

- Safe Work Planning
- Utility Avoidance
- Excavation and Trenching
- Barricades
- Work Zone Safety
- Cranes and Rigging Operations
- Energy Isolation and Electrical Safety
- Maintaining Safe Housekeeping, Walking, and Working Surfaces
- Hazard Communication Program
- Safe Use of Hand and Power Tools
- Safe Use of Scaffolds and Ladders
- Personal Protective Equipment
- Working Safely Around Floor and Wall Openings
- Fall Protection
- Competent Tower Climber
- > HSE Requirements for Erecting Towers (Monopoles, Self-Supporting Tower)
- Securing Materials safely while Working on Elevated Areas
- Safe Use of Lifting Devices and Machinery
- Safe Use of Mobile Elevated Working Platforms
- Welding, Cutting, and Other Hot Work
- Fire Protection
- Illumination
- Electromagnetic Fields (EMF)
- Emergency Preparedness and Response

7.1.1 Requirements for Hazard Identification and Risk Assessment

Contractors shall ensure that supervisors effectively plan their work. The Contractor supervisors shall conduct and document, at each site, a review of the work assignments, site conditions and other HSE requirements for successful completion of work. These include:

- > Subject to the requirements of the job, workers have been medically screened and physically capable of safely performing assigned tasks.
- > Tools and machinery brought to the job site are in good condition and, where necessary, properly equipped with safeguards.
- > Ladders are appropriate to the job requirements, available at the site before work begins, and in good condition.
- Checklists for all equipment are available.
- > Personal protective equipment (PPE) brought to the job site is appropriate, operable and in good condition.
- On multiple project sites, the Contractor shall take necessary steps to ensure timely and adequate exchange of information between affected Contractor teams.
- High-risk activities/jobs are specifically reviewed.
- Documentation shall be maintained by the Contractors on site while work is being performed.

7.1.2 Conducting the Daily Risk Assessment

To ensure that supervisors and their workers review hazards and develop appropriate control measures before each task is performed, Contractors shall require supervisors to conduct daily risk assessments on each site. These requirements shall extend to all subcontractors.

The risk assessment shall also be used to communicate with the Contractor workers the hazards and impacts identified, together with control measures put in place. The elimination or control of the hazards and impacts should be implemented first by engineering methods, followed by administrative methods and, as a last resort, by risk specific personal protective equipment (PPE).

7.1.3 Daily Risk Assessment Review

Contractors shall ensure the following specific areas are included in all risk assessments and discussed daily:

- HSE hazards and impacts associated with the job/task.
- > The level of risk associated with identified hazards and impacts.
- > Controls needed to eliminate or mitigate identified hazards and impacts.
- Electrical energy isolation.
- > Special work procedures required by the job.
- Special precautions related to the equipment or assignment.
- > Personal protective equipment (PPE) required by the work environment.

7.1.4 Verification of Emergency Preparedness

Emergency planning is the final checkpoint for verifying the preparedness of the workers at the jobsite in case of emergencies. As such, the discussion must verify that:

- > Potential emergency situations have been identified for the jobsite.
- > The security classification and requirements for the site has been confirmed.
- > The necessary emergency response team members are present.
- The necessary first aid or medical provisions, firefighting and other emergency equipment is available.
- Emergency contact information for emergency services, next of kin and nearby/local medical facilities are available.

Note

If a contractors' workers discover any unanticipated site conditions (i.e., contamination, archaeological and/or cultural material) all construction work **MUST STOP** and the incident reported immediately to an ATC Project Manager. Work may not resume until cleared by the ATC Project Manager.

7.2 Utility Avoidance

7.2.1 General Requirements

Contractors shall follow a systematic process (in line with national, regional and/or local regulatory requirements) for utility avoidance. The process shall include/address the following elements:

- Contact "utility locator" as required by local authority.
- Review "utility" site specific design drawings when they become available, lay out (paint white line or similar) proposed routing of utility trench(s) as shown on the drawings.
- Observe all water hose bibs, sprinkler heads, perimeter lighting, etc. in the area and determine the apparent route in reference to the site and proposed utility routing(s).
- If no response from utility service, do not proceed with excavations until all information has been reviewed by the Contractor and ATC.
- Invite utility company representatives for a utility identification job walk.
- Contact utility owner and understand their method for locating utilities. Note that not all utility companies subscribe to locating services. In these cases, each utility owner must be contacted, and its method of locating must be understood and followed.
- > Colours/symbols have been adopted by most utilities subscribing to underground service.

Note

Utility companies generally will not locate on private property. The private property owner must be contacted, and arrangements made to locate underground utilities.

All utilities must be physically located by the following methods:

- Non-destructive vacuum extraction (potholing) must be used to verify existence of and determine the exact location of the marked utility.
- Other methods that may be used are Ground Penetrating Radar, Subsurface Utility Tracing, Lateral Identification, and Directional Boring Profile Mapping.
- > When locating underground utilities, hand dig with non-conductive tools.
- Take extra precautions when locating gas lines.

Note

Non-conductive and insulated tools required. Without proper use, care and maintenance, tools can lose their protective properties.

To ensure proper documentation when liability is to be determined, all Contractors should record local authority applications and approvals.

7.2.2 Mechanical Digging & Utility Damage

- > Select equipment to minimise vibration/shock to underground utilities.
- Once the utility is exposed brace, sheet or shore utility to eliminate damage.
- > If damage occurs to a utility, immediately contact the affected utility company.
- > Emergency numbers for all utility companies shall be available at every work location.
- Incidents should be reviewed and required corrective actions documented and communicated properly.
- > The ATC Project Manager should be notified.

7.3 Excavation and Trenching

Contractors shall ensure that:

- All jobs involving excavations and/or trenching have been carefully planned, the proper permits and other required documents are prepared, and a competent person is available on site during the excavation activities.
- > Surface hazards and spoil piles are at least 1 m from the edge of the excavation.
- › All underground utilities are located and protected, supported or removed.
- Excavations and trenches are appropriately identified with signs, warnings and barricades.
- Barricades are being kept as close to the excavation as possible from open edges of trenches and excavations.
- Safe means of entry and exit where a person performs his or her work are provided for excavations more than 1.2 m deep.



- > Walkways, bridges, or ramps are provided where workers or equipment are required to cross over excavations or trenches.
- > Surface obstacles, such as trees, rocks and sidewalks that may create a hazard for workers are removed or secured.
- Workers wear high-visibility garments when exposed to nearby public vehicular traffic.
- > Workers DO NOT stand/work under any loads handled by lifting or digging equipment.
- A warning system is established when the operator of mobile equipment does not have a clear direct view of the excavation edge while the equipment is being operated.
- > De-watering equipment shall be provided before anyone works in an excavation where water accumulates.
- > Excavations more than 2m deep are shored or braced with an appropriate protective system to avoid soil cave-ins.

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- Adjacent structures are shored, braced or underpinned when their stability may be endangered by the excavation operations.
- > Protection is provided from loose rock or soil that could fall or roll from the excavation.
- > In cases where excavations/trenches are not accessible to the public and being left open, it shall be covered or properly barricaded when left unattended.

7.3.1 Notification of Construction Work

- A Notification of Construction Work from the Department of Labour is required for excavations that are made for the purpose of constructing civil engineering structures, whether operations are to be performed by hand or equipment.
- A Notification of Construction Work shall be completed/submitted by the Contractor at least 7 days prior to the commencement of any excavation or trenching activities.
- > The permit must identify a Competent Person who has the authority to take prompt, corrective measures to eliminate problems.
- The responsible Contractor supervisor must ensure that the Notification of Construction Work and daily excavation inspection records are kept at the site until the work has been completed.

7.3.2 Competent Person

"Competent Person" means one who can identify existing and predictable hazards and impacts in the surroundings or working conditions which are dangerous to workers and the environment, and who has authorisation to take prompt corrective measures to eliminate them.

The Competent Person shall:

- Conduct daily inspections of excavations, adjacent areas, and protective systems for evidence of situations that could result in possible cave-ins, indications of failure of protective systems, or any other unsafe conditions prior to the start of each shift and as needed throughout the shift.
- This inspection should be documented in the safety file.
- > Inspect after every rainstorm or other occurrence that could increase the hazards.
- Remove workers from the excavation or trench if any of these hazards exist.

7.3.3 Determination of System

Contractors shall protect workers from cave-ins by an adequate protective system for any excavations or trenches more than 2 m deep:

- Sloping
- Benching
- Shoring Systems
- Shielding Systems

The determination and design of a protective system shall be based on careful consideration of the soil classification and any anticipated changes in the soil due to air, sun, and water infiltration, ground movement caused by vehicle/equipment vibration or any other disturbance.

7.4 Erection of Barricades

- > Contractor workers performing work are responsible for erecting barricades around hazard areas. Workers working inside a barricade are responsible for maintaining the barricade.
- All barricades should be 1.2 m in height. Barricade tape should be tied to vertical support posts and kept secure to prevent from collapsing/hanging onto the ground.
- Barricades must be complete. The hazard area shall be entirely isolated. A permanent structure that prevents entry into the hazard area may be used as part of the barricade. The barricaded area shall be of sufficient size to afford adequate protection.
- > Barricades should not block emergency equipment, such as fire extinguishers, etc.
- The area immediately beneath any overhead work area shall be considered a high hazard area or exclusion zone. "Danger" tape shall be used to control entry into these high hazard work areas (i.e., high probability of falling objects).
- Barricade systems are only effective if adequate controls are implemented to install and remove the barricades in relation to the hazards. All barricades shall be immediately removed when the hazard is removed.

7.4.1 Protective Barricades

Barricades across or next to a roadway shall be protective barricades. The Contractor shall be responsible to ensure that:

- > All barricade systems installed in public and/or private roadways shall be documented in a written traffic control plan, approved by the relevant authority where necessary.
- Appropriate amber flashing lights shall be attached to all barricades in place after dark to alert vehicle traffic of their presence.
- Written traffic control plans must be available at each work site. Contractors shall have written documentation demonstrating all affected workers have been adequately trained on the approved written traffic control plan for that work area.

7.5 Energy Isolation and Electrical Safety

7.5.1 Hazard Analysis

Contractors shall conduct hazard analysis of the workplace to determine areas of the site suspected to be hazardous electrical areas and ensure that workers are not exposed to energised parts and various types of wiring installations.

7.5.2 General Safe Work Practices

All the applicable legal requirements in terms of the Occupational Health and Safety Act shall be followed:

- Only qualified Contractor workers shall be permitted to work on, near, or with energised electric circuits.
- > Contractor workers shall be prohibited from working near any part of an electric power circuit unless the area and worker is protected against shock by de-energising the circuit and grounding it or by guarding it effectively by insulation or other means.
- Where the exact location of underground electric power lines is unknown, workers using jackhammers or hand tools, which may contact a line, shall wear insulated protective gloves.
- Electrical panels shall not be left open or unattended except while actively being worked on. Contractor workers working on the panel shall not leave the area for any reason while the panel is unattended.
- There shall be no exposed panel blanks.
- Only authorised workers shall have access to panel boxes. Access to panel boxes is limited to authorised/qualified workers only through ATC locking mechanisms.
- If site conditions require work within 10 m of overhead power lines and engineering controls cannot adequately assure safe working conditions, a written safety plan including a risk assessment must be developed by the Contractor. The plan is then submitted to ATC for review with the rest of the safety documentation.
- Site workers shall consider static electricity, electromagnetic fields sources, conductive cables and equipment on sites when evaluating jobsite hazards and incorporate the necessary control measures in the daily risk assessments.
- › All electrical tools shall be in good working order, including protective insulation.
- > Electrical cords shall be visually inspected daily. Damaged cords must be removed from service and tagged defective immediately.
- Electrically operated equipment shall be de-energised before repair or adjustments are performed.

7.5.3 Working On or Near Energised Circuits

The requirements herein apply to work performed on energised circuits rated at greater than 12 volts but less than 50 volts. Additionally, it governs work performed on components that are in the "proximity" of other energised components at 600 volts or less.

- The Contractor shall notify ATC prior to commencing any work on exposed energised components.
- > The Contractor shall take an active role in eliminating or minimising electrical hazards prior to starting any electrical work. In all cases the preferred method to perform any work on an electrical component is by de-energising all circuits.
- Only systems that are rated less than 50 volts DC nominal to ground may be worked on in direct contact. Only in exceptional conditions shall any component or system be worked on while energised at a rated voltage of 50 volts or more. Work in direct contact with components and systems that are rated at 50 volts or higher, require the system to be deenergised.
- > The Contractor shall evaluate each site independently to determine specific energy isolation potential based on power configurations and other pertinent data. Working on or near any exposed energised electrical equipment shall only be permitted after the work group has determined that the energy isolation cannot be accomplished.
- > If the energised components cannot be isolated, the Contractor shall:
 - Complete a risk assessment based on specific configurations and data.
 - Reduce or mitigate the hazards by installing protective shields where appropriate to prevent accidental contact by workers or material and/or tools with exposed energised equipment.
 - Utilise appropriate Personal Protective Equipment (PPE) as defined that will protect the individual from the hazard.
- > The Contractor shall provide Qualified Electrical Workers and provide the documentation of qualifications to ATC prior to start of work.
- The Contractor supervisor or equivalent shall be in possession of a minimum First Aid Level 1 training and willing and able to perform a rescue. Additionally, this person must be knowledgeable of the location and operation of the device to de-energise the equipment that is being worked on. The Contractor shall provide Level 1 First Aid training certification (that include CPR training) of the supervisory worker to ATC prior to start of any work.
- > The Contractor shall provide a minimum of two workers to perform this work. The person performing the actual hands-on work must be a Qualified Electrical Worker. The other person shall be the Contractor supervisor.

- All qualified electrical workers who will be performing work shall comply with the following minimum PPE requirements:
 - Wear a non-conductive PPE.
 - Wear a flame-resistant clothing.
 - Remove all conductive material (watches, rings, etc.) prior to beginning work.
 - > Ensure that the manufacturer's recommendations regarding testing and inspection of PPE have been followed.
 - > Wear appropriate electrical gloves when performing electrical work.

Note

Gloves may be temporarily removed to perform a task that requires better finger dexterity.

- When performing the activities near exposed energised systems or conductors rated between 50 - 600 volts, the qualified worker shall wear low voltage rated gloves (Class 0) in addition to the PPE requirements above:
- Prior to commencing work the Contractors' workers must ensure that the area is dry, adequately illuminated and free of obstructions or debris that may become a hazard or interfere with the work activity.
- Care shall be taken of tools in temporary storage while not in use. Tools shall not be placed on top of cabinets or another item where they could possibly fall into energised components.
- When working in proximity of exposed energised circuits that cannot be de-energised, the energised circuit shall be insulated utilizing protective shielding.
- Prior to pulling a conductor through any area with exposed energised components the ends of the conductors shall be sufficiently protected with an insulating material of the same rating as the conductor itself. If a pulling device is used it must be of a nonconductive material.

7.5.4 DC Power Electrical Work Requirements

Prior to commencing any work activities associated with DC power electrical work, Contractors shall comply with the following general requirements:

- > Ensure compliance by assigned subcontractor with these requirements.
- > Utilise only qualified workers when performing DC power electrical work.
- Workers performing work shall have experience in low voltage, high amperage electrical work.
- Take an active role in eliminating and/or minimising electrical hazards prior to starting any DC power electrical work.

> Evaluate each cell site independently to determine specific energy isolation potential based on current site power configurations and any other pertinent data derived from the walk down audit findings.

Note

Work shall not be performed on energised systems unless a specific plan is developed that outlines the scope, safety hazards, personal protective equipment requirements, and is approved by an ATC Project Manager.

- Reduce the hazards by installing temporary insulating barriers where appropriate to prevent accidental contact with exposed, energised electrical equipment.
- Utilise appropriate PPE that shall protect workers from identified hazard(s). This may include hand, arm, face and other upper body protection measures.
- > Utilise appropriate hand tools specifically manufactured for performing electrical work.
- Have a site-specific emergency plan in place including identification of electrical sources and emergency shut-down procedures.
- > Ensure qualified workers working on DC power electrical work activities have at least two (2) workers always present. One (1) worker of the two (2) workers shall have received the equivalent of Level 1 First-Aid training and be currently certified.
- > Ensure that adequately sized and compatible fire extinguisher is available at each DC power electrical work site. If work involves any activities with Lithium-ion batteries, a Lithium-ion fire extinguisher needs to be present on site.

7.5.5 Other Requirements

Prior to performance of any electrical work, the Contractor shall:

- Confirm that all alternate energy isolation possibilities and/or scheduling options for equipment/system de-energisation have been considered.
- > Ensure that other unrelated carrier/vendor workers in the immediate work vicinity (inside of shelter) are kept outside of shelter while any DC power electrical work is being performed.
- Any violations involving DC power electrical work activities may result in immediate removal of the worker(s) from the Project.

7.5.6 Overhead Power lines

- A pre-job briefing shall be held prior to each work shift to ensure safety is covered and that all workers on site are informed as to the safety plan and understand how to comply with it.
- Approach distances between work and overhead power lines shall be constantly monitored and measured to ensure it is in accordance with SANS 10280-1.
- Approach distance is defined as the distance within which equipment is moving to and from the work area and the power lines to perform work in progress.

- Workers shall exercise extreme caution when working near cranes and other lifting equipment that is operating near overhead power lines.
- > Loads being moved near overhead power lines shall never be guided by hand.

7.5.7 Electrical Competence

The Contractor's electrical competence program shall cover these basic elements:

- > Safe procedures for insulation and de-energising circuits and equipment.
- Verification that the equipment has been de-energised.
- Procedures for re-energizing the circuits or equipment.
- Other electrically related information which is necessary for worker safety.
- General safe work practices working around electricity.

7.6 Maintaining Safe Housekeeping, Walking & Working Surfaces

Good housekeeping is a fundamental and necessary activity that is required by every worker working on ATC projects to maintain a healthy and safe worksite. Clean and tidy work areas hold fewer hazards and impacts for workers and the environment. Incidents can be avoided, and productivity improved where good housekeeping has become a daily priority during site works.

Supervisors are required to enforce and routinely monitor work areas.

The Contractor supervisors are responsible for monitoring work areas and ensuring the necessary conditions and precautions are taken to prevent incidents associated with substandard walking and working surfaces.

- > Construction areas shall be cleaned and arranged by safe means daily to avoid creating tripping, slipping, and fire hazards.
- > Means shall be available for the containment of material spills.
- Spills shall be cleaned up by individuals trained to handle the material and shall be done promptly and disposed of properly. (Consult the MSDS for proper handling instructions.)
- For debris, equipment, and material waste, the Contractor must ensure that appropriate trash containers are available and used for disposal of scrap materials and other generated debris. Containers shall be removed from site and emptied daily.
- Liquids (such as paints, oils and greases) and any other material or containers, which have contained chemicals, are disposed of in accordance with the hazardous waste procedures and regulatory requirements.
- Materials are stored or placed in an orderly manner.
- All scrap lumber, waste material and garbage are removed from the immediate work area as the work progresses.
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- > All solvent waste, oily rags and flammable liquids are kept in fire-resistant covered containers until removed from the worksite.
- > Keep floors clean, dry (as possible), slip-resistant, free of waste, unnecessary material, oil and grease, protruding nails, cables, tools, etc.

7.6.1 Flammable and Combustible liquids

- > Smoking shall be prohibited where refueling activities are in progress.
- > Combustible liquids, including oil or grease, shall be stored in containers, labelled with contents and container capacity.
- > Each container shall be maintained in a manner that prevents leakage.
- > Particular care should be taken when welding and cutting in locations where combustibles are exposed.
- > When such welding or cutting is done, the surrounding area shall be inspected.
- > Combustible material shall be removed or protected, and an adequate number of approved fire extinguishers shall be immediately available.

7.6.2 Safe Walking and Working Surfaces

Supervisors are required to ensure that walking surfaces are suitable for workers to safely access work areas. This includes areas prepared by earthmoving equipment or while working on rooftops or other locations.

7.6.3 Rooftop Safety Precautions

Contractor supervisors are responsible for monitoring work on rooftops to ensure the appropriate conditions are maintained during work operations and that the necessary precautions are taken to prevent incidents involving the public, tenants and workers.

The following are minimum precautions that shall be addressed for each rooftop site:

- Prevent public access to rooftop and work areas as far as is reasonably practicable. This
 may require coordination with building management.
- > Limit access to the work areas using appropriate barricades.
- > Identify fall hazards through proper barricades of the exclusion zones.
- Highlight tripping hazards using caution tape along walk routes to/from the work area.
- > Remove all debris from work area and maintain housekeeping during all tasks.
- Route electrical and other lines overhead and maintain safe/clear walkways.

7.7 Hazardous Chemical Substances

To comply with Hazardous Chemical Substances Regulations, the Contractor shall compile a list of hazardous chemicals/materials', collect, maintain and use MSDS ensure that containers are labelled; and train their workers.

In addition, Contractors shall provide this same information to subcontractors involved in specific jobs on ATC sites so that they in turn provide this information and train their workers.

7.7.1 Material Safety Data Sheets (MSDSs)

Contractors are responsible for obtaining and maintaining MSDSs of all chemicals used during their work operations on ATC site. The Contractor workers shall be provided easy access to MSDSs via their Site Supervisor. The MSDS shall conform to requirements as stated by HCS Regulations of OHS Act 85 of 1993.

7.8 Safe Use of Hand and Power Tools

The Contractor workers using hand and power tools that are exposed to the hazard of falling, flying, abrasive and splashing objects, or exposed to harmful dusts, fumes, mists, vapours, or gases shall be provided with the personal protective equipment necessary to protect them from the hazard.

Following these basic safety rules can reduce/prevent most hazards involved in the use of power tools:

- › Keep all tools in good condition with regular maintenance.
- Use the right tool for the job.
- > Examine each tool for damage before use.
- Operate according to the manufacturer's instructions.
- > Provide and use the right protective equipment.
- > When it is not in use, the tool and its cartridges must be locked away.
- › All tools in storages are not allowed to be loaded.

Note

Tool lanyards are mandatory when using tools at heights. Barricades may be necessary to protect workers and members of the public below overhead operations.

7.8.1 Power Tool Precaution

Power tools can be hazardous when improperly used. Depending on the type of power tool and the power source used (i.e., electric, pneumatic, liquid fuel, hydraulic and powder–actuated, etc.) certain precautionary steps must be taken.

Contractor workers shall be trained in the use of all power tools utilised to perform their tasks. They shall understand the general safety precautions and potential hazards associated with use of that tool, including specific manufacturer instructions.

Power tool users shall observe the following general precautions:

- Always be aware of other workers in your immediate area that may be affected by your use of tool.
- Never carry tools by the cords or hoses. Tools that must be raised or lowered from one elevation to another placed in tool buckets or raised by hand lines.
- > While working overhead on towers, rooftops, etc., the Contractor shall install barricades or other positive means to safeguard workers working below.
- > Damaged or defective tools are to be taken out of service and stored in a controlled area until appropriate repairs have been made.
- Tools are not to be altered in any way and shall be operated in accordance with manufacturing specifications.
- > Tools required to have guards shall be operated with guards in place.
- > Persons who operate ground compactors, rollers, chisel impact hammers, and other such tools shall wear appropriate protective footwear.
- Disconnect tools when not in use, before servicing, and when changing accessories such as blades, bits and cutters.
- > Hand-made tools of any kind are prohibited on ATC projects (such as tools made of rebar, rigging equipment, or equipment that is modified in any way).
- Metallic measuring tapes or metal fish tapes shall not be used on or near exposed energised conductors, power lines and/or other related equipment.
- > Tools shall not be thrown from place to place or from person to person.
- > Tools shall not be left unsecured on scaffolds, platforms or other elevated places where falling could endanger workers below.
- Impact tools such as chisels, punches, drift pins and hammers that become worn, mushroomed, or cracked shall be removed from service.
- The proper apparel should be worn. Loose clothing, ties, or jewellery can become caught in moving parts.
- Only manufacturer-approved extensions shall be used for added leverage on any tool.
- > Tools with sharp edges shall be stored and handled so they will not cause injury.
- Tool handles shall be kept clean of oil and grease.

7.8.2 Electric Tools

Workers using electric tools must be aware of several dangers, the most serious is the possibility of electrocution. To protect the user from shock, portable electrical tools shall utilise grounding, double insulated properties or ground fault circuit interrupters.

7.8.3 Pneumatic Tools

There are several dangers encountered in the use of pneumatic tools. One of the main dangers is being hit by one of the tool's attachments or some kind of fastener the worker is using along with the tool.

To protect workers from these types of hazards, users shall follow the additional requirements below:

- > Working with noisy tools such as jackhammers requires proper use of ear protection.
- > When using pneumatic tools, workers must check that the tools are fastened securely to the hose by a positive means to prevent them from becoming disconnected.
- A safety clip or retainer must be installed to prevent attachments, such as chisels on a chipping hammer, from being unintentionally shot from the barrel.
- Jackhammers can cause fatigue, strains and cumulative disorders. Heavy rubber grips, special ergonomic gloves and buddy systems can reduce these effects.
- Workers operating a jackhammer or chipping hammer must always wear the appropriate PPE.

7.8.4 Gasoline / Other Fuel Tools

The most serious hazard with fuel-powered tools come from fuel vapours that can burn or explode under the right conditions.

To prevent this from happening, workers shall follow these requirements:

- Gasoline powered tools shall not be used in unventilated areas or confined spaces.
- Gasoline shall be dispensed from approved safety cans. These cans shall be properly labelled and stored when not in use.
- > Fire extinguishers must be available in the area when fuel-powered tools are used.
- Use extreme care while handling, transporting and storing gas or fuel and always handle according to proper procedures for flammable liquids.
- > Before the tank for a fuel-powered tool is refilled, the user must shut the engine down and allow it to cool to prevent accidental igniting of hazardous vapours.

7.8.5 Hand Tools

- Only guarded knives will be used for cutting.
- Tie wraps, boxes, etc. are being cut with snips or guarded knives.
- > When working with tools at heights, always use a tool lanyard to secure tools from falling.

7.9 Safe Use of Scaffold and ladders

7.9.1 General Scaffold Erecting / Disassembling Requirements

All scaffolds erected shall comply with the Construction Regulations requirements. Scaffold erection, modification, moving or dismantling must be done under the supervision of a competent person who has been appointed in writing and that all scaffold erectors and inspectors are competent to do their work.

- > Where persons are required to work or pass under the scaffold, scaffolds shall be provided with a wire mesh or equivalent, between toe board and the mid-rail (i.e. Safety Netting).
- Platforms shall be tightly planked for the full width of the scaffold, and they shall extend over the end supports between a minimum of 70mm and a maximum of 200mm. A cleat or equivalent shall be used on the bottom edges of the plank to prevent slippage. All scaffold planking shall be scaffolding grade or equivalent.
- All scaffolds should be erected plumb.
- Any scaffold accessories such as braces, trusses, legs or ladders that are damaged shall be immediately repaired or replaced.
- A rolling scaffold height shall not exceed four times the minimum base dimension. The wheels shall be locked when workers are on the scaffold. Workers are prohibited from riding scaffolds when they are being moved.
- Scaffolds and their components shall be capable of supporting, without failure, at least four times the maximum intended load.
- All scaffolds shall be built complete where possible, including a standard 106.7 cm. high handrail and mid-rail 53 cm. from work platform both rigidly secured, with complete decking and toe boards. Toe boards shall be securely fastened. There shall be no space between the toe board and scaffold deck. Toe boards shall be built from 2.54 X 10 cm.
- When the scaffold erection has been completed, a scaffold tag shall be placed at the scaffold access point indicating the scaffold is ready for use.
- The use of scaffold tagging is mandatory. A competent person shall tag all scaffolds. No one shall work from an untagged or Red tagged scaffold.
- Scaffolds higher than 15.24 m above the base plates must be approved by a qualified/ certified engineer. A registered professional engineer must design a scaffold exceeding 38 m in height.
- Scaffold erectors shall use fall protection while erecting scaffolding.
- Scaffold legs shall be set on base plates placed on foundations or mudsills that are adequate for supporting the maximum intended loads.
- All casters used with scaffolding shall have rubber treads and positive locks to hold the scaffold in position. Casters shall be locked when the scaffold is being erected or used.
- Adjusting screws shall be installed only between the base plate and the vertical frame section. The use of adjusting screws with casters is prohibited. Extending adjusting screws beyond 30 cm is prohibited.



- Scaffolds should be properly braced with cross braces and/or diagonal braces to laterally secure vertical members, so the erected scaffolds are always plumb, square and rigid. Manually propelled mobile scaffolds shall be laterally braced with a horizontal diagonal brace in addition to a cross brace. The use of cross-braces as handrails or mid-rails is prohibited.
- > When the height of a scaffold exceeds four times the smallest width of the base, it shall be secured to the building or structure at every other lift and every 9 m

horizontally. Out-riggers shall be used when it is impractical to secure the scaffold to the structure.

- Gates shall be installed where possible at ladder access points.
- Scaffold planks are not to extend over their end supports more than 30 cm or less than 15 cm. Scaffold planks shall be secured to prevent movement.
- > Scaffold components manufactured by different manufacturers shall not be intermixed.
- > Prior to use, scaffolds shall be visually inspected. Deficiencies shall be reported to supervision and a competent scaffold person for immediate corrective action.
- Scaffolds and their components must be capable of supporting, without failure, at least four times the maximum intended load. Materials should be evenly distributed on platforms and not concentrated in one area.
- Caster ratings are the limiting factor in calculating the maximum allowable load for scaffolds. As caster ratings vary, the manufacturer's specifications for the rating of casters in use should be checked.
- Workers shall be adequately protected against falls at 1.8 m or higher.

7.9.2 General ladder Specifications

The following guidelines are applicable in the safe use of ladders:

- Two or more people shall not work from the same ladder unless it is specifically designed for two people. Special pre-task planning should be conducted before workers use a twoperson stepladder.
- A rope shall be spliced to the top back rung of stepladders or to the third rung from the top of straight and extension ladders to provide a means for ladder tie-off.
- Hand-made ladders are prohibited.
- Joining two ladders together is prohibited.
- > Trestle ladders are not to be used to support scaffold planking
- Straight ladders shall not be longer than 6 m.
- > Extension ladders shall not be extended more than 11 m.
- › All straight and extension ladders shall have non-slip feet.
- Stepladders and platform ladders shall not be longer than 3.5 m as determined by the front rail.

- Ladders may not be painted, except for the platform and top step, which shall be painted to warn users not to step thereon. The side rail may be painted in order to comply with quarterly inspection requirements.
- All portable ladders shall be equipped with non-skid safety feet and placed on a stable base.
- The access areas at the top and bottom of ladders in use shall be kept clear of obstructions.

7.9.3 Safe Use of ladders

- Ladders shall be placed with secure footing, lashed or held in position.
- > The side rails of all ladders shall extend 91 cm above the landing. When this is not practical, grab rails shall be installed. All ladders in use shall be tied, blocked or otherwise secured to prevent displacement.
- The foot of a ladder, where possible, shall be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder (the length along the ladder between the foot and the support).
- Workers shall always face the ladder when climbing up or down.
- > When portable ladders (step/extension) are used as a work platform, workers shall utilise appropriate fall protection/restraint equipment when work elevation exceeds 1.8 m.
- > Short ladders shall not be spliced together to make longer ladders.
- > Ladders shall never be used in the horizontal position as scaffolds or work platforms.
- The top of a regular stepladder shall not be used as a step.
- Use both hands when climbing and descending ladders (three-point contact rule).
- Carrying tools while climbing or descending ladders is prohibited. To help reduce the possibility, a hoist rope and bag should be secured nearby ladders that serve as access to overhead work areas.

7.9.4 Inspecting ladders

- The Contractor shall inspect all ladders at regular interval and document these inspections. Workers who use ladders are responsible and expected to inspect ladders before use.
- Bends, dents, cracks, loose or missing rivets, disconnected braces and corrosion can seriously weaken a ladder. The area around rivet points on ladders shall be carefully inspected for hairline stress cracks. Any defective ladders shall be destroyed or removed from use immediately.
- Ladders with broken or missing rungs, broken or split side rails or damaged in other ways shall be removed from service.

7.9.5 Storing and Transporting ladders

- > When not in use, ladders shall be stored on racks in locations protected from the elements, with good ventilation away from excessive heat.
- Materials are not to be stored on ladders.
- Ladders being transported by motor vehicles shall be properly supported. Supporting points shall be made of material such as wood or rubber-covered iron pipe to minimise chafing and the effects of vibration and movement during transport.
- Ladders over 3.7 m in length shall be carried by two workers.

7.10 Personal Protective Equipment (PPE)

The Contractor shall monitor its workers and subcontractors for compliance to the following requirements and shall take immediate corrective action when non-compliance is observed.

7.10.1 Head Protection

- > Bump caps and metallic hard hats or caps are prohibited.
- Certain types of headgear such as Petzl and others are permitted for tower climbing and rescue operations only – no ground or shelter work, so long as they meet the requirements of the SANS codes of practice.
- Where required, hard hats are to be worn and facing with brim forward while on site, except during lunch and break periods (providing no work is in progress in the immediate break area) or when operating equipment with fully enclosed cabs.
- > Chinstraps shall be worn when performing elevated work higher than 1.8 m.

7.10.2 Eye Protection

- Subject to type of risk exposure, workers on shall wear approved protective eyewear while on site.
- Where required, safety glasses are to be worn while on site, except during lunch and break periods (providing no work is in progress in the immediate break area) or when operating equipment with fully enclosed cabs.
- All grinding operations shall be performed with a full-face shield and safety glasses or goggles.
- Persons who wear prescription or corrective eyeglasses shall wear approved prescription safety glasses, goggles or over-the-glass (OTG) safety glasses.
- > Welders shall wear face shields while welding. (welding helmet).

7.10.3 Respiratory Protection

If the Contractor requires workers to wear respiratory protection:

- Respiratory equipment shall be selected based on the hazards to which the worker shall be exposed.
- > Only approved respiratory protection equipment shall be worn.
- > Respiratory equipment shall be used, stored, and maintained in accordance with the manufacturer's requirements and the Contractor's own PPE requirements.

7.10.4 Hearing Protection

If a job-related hearing hazard is extreme or prolonged and requires a form of hearing protection, then the Contractor shall implement hearing protection for the affected workers. This includes the mandatory use of protective equipment when operating equipment that produces sound levels at and above the 85 dB (A).

 Only approved hearing protection shall be worn by all workers in designated areas.
 Contractors shall ensure that hearing protection provided attenuates noise to levels below 85 dB (A).

7.10.5 Foot Protection

At a minimum, sturdy steel toe capped shoes/boots are required. In addition, the following requirements shall apply, if applicable:

Additional foot protection, such as shin protection, metatarsal guards, etc. shall be worn any time the job being performed creates additional hazards and possible injury of the foot or lower leg/ankle extremity.

7.10.6 Hand Protection

All workers engaged in work shall wear gloves appropriate for the task, at hand. Appropriate work gloves shall be worn whenever workers are performing work where their hands and fingers might be cut or punctured by the material they are handling.

Specifically:

All workers engaged in wire or coaxial cable cutting, stripping or grounding installation shall wear the appropriate gloves.

- > All workers who are working in energised electrical panels and components shall use approved rubber insulated gloves.
- Work gloves shall not be required when work activities require the ability to complete detailed work such as terminating wiring. (The use of gloves in these types of work operations is not feasible).
- Generally, work gloves should not be worn when operating rotating tools or equipment, such as rotating machinery.
- The Contractors shall be responsible for furnishing the appropriate work gloves to workers.
- > Work gloves should be in good condition, free from holes and fraying.

7.10.7 Dress Requirements

All workers are required to wear clothing appropriate for the work being performed. Long pants, shirts with sleeves are required.

- > Sleeveless shirts and other such apparel or practices are prohibited.
- Wearing shorts is only permitted in the absence of hazards and possible injury of the foot or lower leg/ankle extremity.
- Persons working near moving machinery must prevent clothing and body parts from being caught by moving components.
- > Clothing soaked with grease, paint, thinners, solvents, fuels or similar materials shall not be worn.

7.11 Fall Protection

7.11.1 General Requirements

- Contractors shall implement and adhere to a program that provides full fall protection on ATC sites.
- Contractor workers who are working at 1.8 m above ground surface or higher shall be protected from falling using guardrail, safety net, or personal fall arrest systems. One or more of these protective systems shall be in place all the time when workers are exposed to falling from 1.8 m and higher.
- The Supervisor must assess jobsite conditions and ensure that full fall protection is enforced.
- Contractors shall provide and install all required fall protection systems before workers begin work.

Anchorages used for attachments of personal fall arrest equipment shall be capable of supporting workers attached. Anchorage points for fall protection shall be structural members of the tower or monopole. Antenna mounts, step bolts (climbing pegs) and gin poles are not structural members and attaching fall protection equipment to these items is prohibited.

7.11.2 Personal Fall Arrest Systems (PFAS)

Contractors shall ensure that workers who use PFAS apply:

- Suitable anchorage points.
- Full-body harness equipped with two side D-rings and at least one front and one back D-ring.
- A split lanyard (Y-lanyard) with shock absorber and connectors at each end, or two single lanyards attached to a shock absorber with double-locking snap-hooks or self-locking carabineers.

Note

A work-positioning device, shall not be used as a primary fall arresting device.

7.11.3 Inspection and Care of Equipment

Contractors shall ensure that workers who use PFAS:

- > Inspect for wear, damage and other deterioration prior to each use.
- Have their PFAS components inspected and documented at intervals required by manufacturers and regulators by a competent person.
- > Tag defective equipment and remove them from service.

Failure to comply may result in contract suspension up to and including formal contract termination.

7.11.4 Rappelling

The act of rappelling on towers to a lower elevation is strictly prohibited.

- Any person observed rappelling shall be removed from the site immediately and indefinitely.
- As an alternate option, a "controlled descent" plan may be submitted to ATC for approval.



7.12 Competent Tower Climber

7.12.1 General Requirements

Contractors shall ensure that they:

- > Supply equipment that meet ATC and regulatory requirements for use.
- Maintain a record of training of contractors' workers working on ATC projects to show compliance with this procedure and applicable legal and other requirements.
- Provide a record of certification for all workers assigned to ATC projects.
- Procedures are established and implemented and provide equipment for prompt rescue of workers in an emergency. This includes, but is not limited to, having at least two workers on site who are trained in rescue and ensuring that proper rescue equipment is on site, accessible and in satisfactory working condition when elevated work is in progress.
- Retrain any worker when there is reason to believe that any affected worker, who has already been trained, does not have the understanding and skill required to work on elevated positions.
- > Circumstances where retraining is required include, but are not limited to, situations where:
 - > Changes in project requirements that render previous training obsolete; or
 - Changes in the types of fall protection systems or equipment to be used render previous training obsolete; or
 - Inadequacies in an affected worker's knowledge or use of fall protection systems or equipment indicate that the worker has not retained the requisite understanding or skills.
- > Ensure all competent climber workers complete refresher training every 3 (3) years.
- > Ensure compliance by their workers with the written on-site rescue plan including rescue trained workers and available rescue equipment.

7.13 Erecting Towers and New Platforms on Existing Sites

7.13.1 Requirements for Erecting Towers

- Contractors shall ensure that their Supervisors and tower workers possess the necessary skills to safely install, dismantle and rig towers.
- No one should attempt to install or dismantle any tower or tower component without the necessary skills and experience. The Contractor supervisor shall ensure that its workers, including subcontractors are physically capable of safely performing assigned tasks.

7.13.2 Planning Erection of Towers

Contractors shall supervise and direct the installation and shall be solely responsible for all construction means, methods, techniques, sequences and procedures.

Prior to the start of tower erection, the Contractor shall:

- > Ensure that there is an emergency response plan and review with all site workers.
- > Obtain and review tower erection drawings, installation and/or erection manuals.
- Inspect tower foundation to ensure it is installed according to the design specifications.
 Concrete strength shall be verified to meet or exceed the minimum strength criteria.
- > Identify any potential hazards such as overhead power lines or buildings and put in place the proper precautions / controls to be followed for crane operations.
- Assess whether the tower can be assembled on the ground. (Attempt to eliminate fall hazards associated with the task).
- > Ensure that tools, cranes, rigging and machinery brought to the site are in good condition and, where necessary, properly equipped with safeguards.
- Select appropriate ladders for the task and inspect to ensure that ladders are in good condition.
- > Ensure proper means of electrical grounding are available for the tower that meets local and national codes.
- > Cranes may also need to be grounded when working near or around power lines.
- Ensure that supervisors and their workers review hazards and impacts and develop appropriate control measures for each significant task.
- > Select the most appropriate means of accessing the tower. Considerations shall be given to the use of crane suspended workers platforms or aerial lifts.
- > Ensure that tower erection activities are not performed during adverse meteorological conditions (heavy winds and rain, snow and lightning, etc.).
- Check condition of safety climb and other structural connections to ensure safe climbing surface/anchor points.

7.13.3 Tower Delivery and Offloading

Special care shall be taken during the unloading, hauling and offloading to prevent workers injury or damage to the tower and component parts.

- > Contractors shall take measures to ensure that lay down area boundaries are established and communicated to site workers.
- Contractors shall ensure delivery vehicle's wheels are properly chocked to prevent unexpected movement while unloading.
- Contractors shall ensure that tag lines shall be used when lifting tower components by crane or other lifting devices (boom truck, gin poles, etc.).

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- > Do not roll or drop any sections from the truck to the ground. Do not drag or stack the components in such a way that workers injury or damage may occur.
- Contractors shall ensure that all tower components are present and in satisfactory condition.
- > The manufacturer shall be contacted for any missing or damaged parts.
- > The use of misused, damaged, overloaded or used parts is prohibited.

7.13.4 Erecting Towers

Contractors shall:

- Maximise ground assembly to reduce potential fall hazards to workers.
- > Install climbing ladder sections, branch sections, etc. while the tower pieces are still on the ground.
- Check that all bolting has been completed and tightened. Double worker verification is a good practice.
- > Check material grade on structural bolts. Some towers supply nut locking devices that shall be used when required.
- Prior to lifting the first piece of steel plan for the installation, use and removal of temporary vertical lifelines used for fall protection. In most cases, excessively long sections of lifeline may be eliminated if a ground crew member attaches and detaches lifelines to each new section being raised. Rope lifelines shall be tethered to the tower or weighted to allow free travel and operation of rope grab devices.
- Install the permanent safety climb as soon as possible.
- Use tag lines when lifting tower components by crane or other lifting devices (gin poles, etc.).
- > Install antenna mounts to the maximum extent possible on the ground rather than at elevated heights.
- > Ensure that any temporary or permanent attachments (antenna support arms/ platforms), made to the tower or structure, do not interfere with the climbing ladder, step bolts or safety climb device.

7.13.5 Specific Towers / Poles Monopole Slip Joints

Slip Joint assemblies require the proper amount of overlap. The manufacturer's structural drawings usually list the design slip value and the allowable overlap range and target values. Inspection of the internal area of the slip joint and mating surfaces should be conducted prior to erection. A clean inside surface free of galvanizing buildup of debris will save problems during the installation and allow a proper fit.

7.13.6 Self-Supporting or lattice Towers

- Caution must be taken when erecting pre-assembled horizontal sections from the assembly area to the vertical position. Racking may cause damage to the assembly. A second crane or tail hook may be required depending on size of the assembly.
- Face spread dimension centre to centre of anchor bolts circles should be per manufacturer's tolerances.
- Maximum difference between any two foundations and elevations should be per manufacturer's tolerances.
- > Wave guides shall not be used as personal fall protection anchorage points.
- Workers shall not use wave guides as climbing devices.

7.13.7 Platform Installations on Existing Towers

Prior to climbing:

- Conduct pre-climb safety meeting and document on the provided Contractor form / checklist.
- Inspect the tower from the ground for missing members, obvious structural damage, bent supports, excessive corrosion, insects and bird nests, etc. (Use of binoculars is recommended).
- > Ensure that the step bolts are aligned, evenly spaced and completely secured throughout the structure.
- Ensure that the area to be accessed is free from obstructions.
- Determine the potential exposure to EMF radiation near or in front of any operating antenna.
- > Identify possible anchorage points for fall protection devices.
- Identify nearby hazards (power lines, etc.)

Note

The Contractors shall develop appropriate control measures to adequately address identified hazards. Upon inspection, if a tower is deemed unsafe to climb, the Contractor shall immediately notify the ATC Project Manager.

7.14 Securing Materials Safely while Working on Elevated Areas

- Contractors must plan and schedule work to prevent workers from working over one another, but if the sequence of tasks requires such work to be performed, then the risk assessment shall focus first on preventing dropped items and second to protect workers below from falling objects (other than via a hard hat).
- All material and equipment shall be secured, as required, to prevent falling hazards.



- > Canvas bags with locking snap hooks, tool lanyards or suitable alternatives shall be used for raising and lowering tools/equipment.
- Barricaded areas shall be established as needed below when overhead work is being performed.
- Material shall be raised or lowered one item at a time to prevent over-loading of the bag.
- > While climbing, workers shall maintain 3-point contact (hands free while climbing).

Note

Hand tools shall be secured to workers by lanyards while working overhead. In some cases, ground barricades may be necessary to protect workers and members of the public.

7.15 Welding, Cutting and Other Hot Work

- No welding, (including exothermic welds), cutting, or drilling, unless noted on the drawings of the structure will be permitted at any time.
- All repairs or alterations shall be done per engineering drawings and after consultation with the designer to ensure that all other methods have been considered in place of exothermic welding.
- Appropriate firefighting equipment shall be immediately available in the work area and shall be maintained in a state of readiness.
- No hot work will be permitted on site during time when fire danger (FDI) is high in the area where the ATC site is located.

7.15.1 Welding and Cutting

- › An authorised person shall perform all welding and/or cutting operations.
- Fuel gas systems shall be equipped with approved backflow valves, flash arresters, and pressure relief devices.
- > Fuel gas equipment shall be disconnected from the source when left unattended or at completion of the task.
- All workers shall use the proper PPE and clothing when performing or assisting in cutting and welding operations (face shields, gloves, etc.).
- > Welding leads and equipment shall be properly maintained and inspected before use.
- Defective equipment shall not be used and shall be reported to supervision.
- Arc welding and cutting operations shall be shielded by appropriate screens, shields, or other safeguards for the protection of workers or materials exposed to sparks, slag, falling objects, or the ultraviolet (UV) / infrared (IR) radiation of the arc.
- If electrode holders are to be left unattended, the electrodes shall be removed, and the holder placed where it is protected from unintentional contact.

- Welding machines shall be turned off when being moved or when the welder must leave work for any length of time.
- > No welding or cutting shall be done where flammable substances may create a hazard.
- Welding leads or cords that cross a pathway or roadway shall be protected from damage.
- > Welding leads with broken insulation shall be taken out of service and repaired. Ground leads can be repaired with tape if the safe current carrying capacity is not compromised.

7.16 Fire Protection

The Contractor's fire protection program shall consist of the following:

- Provisions for storage or dispensing of flammable liquids which meet regulatory requirements.
- Worker competence in the proper use of fire extinguishers.
- > Fire extinguishers provided and available with current inspections/certifications.
- Appropriate firefighting equipment shall be immediately available in the work area and shall be maintained in a state of readiness.
- > Fire extinguishers shall be inspected, tested and maintained in accordance with the National Fire Protection Association (NFPA) standards.
- > Each fire extinguisher shall be replaced immediately after discharge with another fire extinguisher that is fully charged and of the proper size and type.
- If normal fire prevention methods are not sufficient to adequately ensure the prevention of fires, additional workers shall be added (fire watch) to guard against potential fires. Fire watches shall remain at the location for a minimum of 30 minutes after work is stopped to ensure that no possibility of combustion and a subsequent fire exists.
- Proper fire prevention planning includes strict adherence to local fire codes and ordinances.

Note

Burning of excess construction materials (wood, cardboard, trash, etc.) at the work site is forbidden.

7.17 Illumination

Contractor supervisors should plan work as far as practicable to limit the need for night work. When night work is required, the responsible Contractor supervisor shall ensure:

- Contractor has been informed and authorised work to be performed.
- All necessary precautions have been implemented.

- Adequate illumination is provided around areas where hazards may exist if the ATC site lighting is not adequate.
- > Lighting provided is of efficient intensity that workers are not working in the shadows.
- Risk assessments have been completed as required by the nature of the work.

7.18 Area Lighting

The following general requirements for area lighting (natural or artificial as may be required) shall be followed:

- > Ladder access and egress shall be clearly illuminated.
- > Lighting shall be placed appropriately to ensure that all work areas are illuminated.
- Cables supporting temporary lighting shall be routed to ensure they do not present a hazard.
- All lighting fixtures shall be installed in a secure manner to prevent accidental movement or falling.
- > Temporary electrical/lighting installations shall meet all the legal requirements. Certificate of Compliance (COC) for temporary installations shall be available on site.
- Light bulbs attached to lighting strings and extension cords shall be protected by lamp guards.
- > Broken or defective bulbs shall be promptly replaced.

7.19 Electromagnetic Fields (EMF)

7.19.1 General Requirements

Contractor workers with potential exposure to EMF shall ensure the following general precautionary requirements are met:

- Only authorised entrants shall be allowed access.
- Obey all posted signs.
- Assume all antennas are active.
- Do not stop in front of antennas, but if it can't be avoided, maintain at least 3 m static clearance in front of antennas for a maximum for 6 minutes at a time.
- Use personal RF monitors while working near antennas (not mandatory).
- > Never operate transmitters without shields during normal operation.
- > Do not operate base station antennas in equipment room.

7.19.2 Training and Qualification Verification

All workers entering an EMF controlled area shall be trained. Training shall include but not be limited to the following:

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- > ICNIRP Guidelines: occupational and public exposure limits.
- Concepts of non-ionising and ionising radiation.
- Exposure concepts, health symptoms and effects.
- Mitigation and control measures.
- > All workers who will be required to wear protective equipment shall be trained in its proper use, inspection and limitations.

Note

If EMF exposure cannot be reduced to within the occupational exposure limits by following the general precautionary measures mentioned above, the Contractor shall utilise personal monitoring equipment. It will be the responsibility of the Contractor to determine if occupational exposure limits may be exceeded at each site.

7.20 Construction Machinery and Equipment

- All Contractors shall have deemed their workers/operators qualified and authorised to operate specific construction machinery and equipment prior to its use.
- All operators shall always wear seatbelts when operating any piece of construction equipment.
- > Workers in the vicinity of operating equipment shall wear high visibility / reflective vests.
- Moving equipment shall be installed with automatic back up alarms.
- > Workers shall not ride on the equipment (hitches, steps, etc.) unless equipment is provided with an approved passenger/demonstrator seat equipped with seatbelt protection.
- Workers shall not walk or work under loads on cranes/hoists.
- Workers shall stay clear of swing radius (cranes, counterweights, etc.).

8. Applicable / Referenced Documents

- Occupational Health and Safety Act, 85 of 1993 and Regulations
- National Environmental Management Act 107 of 1998
- > HSE-PRC-0021 ATC Site Emergency and Evacuation Procedure
- > HSE-AGR-0001 Section 37(2) Mandatary Agreement for Contractors
- HSE-FRM-0019 Principal Contractor Appointment
- HSE-POL-0001 Occupational Health and Safety Corporate Policy
- > HSE-PRC-0009 Nonconformity & Corrective Action Procedure
- > HSE-PRC-0019 Contractor Management Procedure
- > HSE-PRC-0040 Contractor H&S Incident Reporting Procedure
- > HSE-RA-0004 ATC Contractors Baseline Risk Assessment

Thank you



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