HEALTH & SAFETY SPECIFICATIONS FOR CONTRUCTION AND INSTALLATION WORK ACTITIVITES AT SANBI PREMISES.

1. Purpose

The objective of the Health and Safety Specifications is to provide a guideline for the principal contractor in complying with the requirements of the Occupational Health and Safety Act 85 of 1993 and its Regulations.
The Health and Safety Specifications do not replace the OHS Act and relevant regulations, but is a supplementary document to the requirements of relevant legislation and the conditions of the contract agreement between the SANBI and the Principal Contractor.
It does not imply that sections of legislation not referred to in full in this document are of less importance and/or not relevant. The Contractor remains responsible to comply with the Act, regulations and their health and safety plan.

In terms of Section 37 of the Occupational Health and Safety Act (Act no. 85 of 1993), SANBI is required to control persons/organizations conducting activities for or on their behalf (Mandatories) and the Construction Regulations promulgated under the Occupational Health and Safety Act (Act no. 85 of 1993), is requiring SANBI to compile an occupational health and safety specification for any intended project classified as construction work and to provide the specification to prospective tenderers / Mandatories.
The dual objective of this specification is to ensure that the Mandatories and Service providers entering into a contractual agreement/relationship with SANBI achieves and maintains an acceptable level of occupational health, safety and environmental performance whilst conducting activities to perform the contract work.

2. Scope of Occupational Health, Safety and Environmental (SHE) Specification

The scope of this Occupational Health, Safety and Environmental (SHE) Specification is to address the reasonable and foreseeable aspects of occupational health, safety and environmental management, which will be affected by the contract work and it covers any of the following activities:

General Civil and Construction activities:
Alterations and renovations to existing buildings
Demolition work (portion of buildings)
Breaking up of mass concrete/brick paved areas and brick work
Removal of all sanitary fittings
Preparatory work to existing surfaces
Work conducted inside existing buildings
Earth works / open face excavations/trenches/backfilling
Concrete works; formwork; reinforcing

Installation of security lights
Installation of CCTV system
Internal electrical installations
Site electrical reticulation
Installation of roof coverings (galvanized steel)
Installation of roof insulation
Installation ceilings; partitions & access flooring
Installation of electrical light fittings
Installation of suspended ceilings
Installation of electrical fencing
Bush clearance for palisade fencing
Electronic installations to existing buildings
Concrete in foundations – superstructure
Rough formwork
Steel reinforcement
Masonry work / water proofing of roof coverings
Carpentry and joining
Ceilings installation; partitioning / access flooring
Iron monger
Installation of bathroom fittings
Structural steelwork / metal work
General plastering work
Tiling work
Paint work on new work (external plastered walls)
External works – preparation of soil for paving
Removal of existing work
Building up openings
Re-fixing of existing palisade fencing
Earth works and filling (import material)
Soil poisoning -Submit MSDS
Concrete formwork & reinforcement
Formwork to soffits of solid slab, sides of bases
Reinforced concrete casts – strip footings & bases
Masonry work – for new work
General brick work (one and two brick walls)
Building of superstructure
Installation of concrete lintels
Waterproofing (damp proofing of walls/floors/roofs)
Ironmongery work
Fitting of bathroom fittings

Metal work – including door frame installations; gates and screens
External/internal plastering work (New work scope)
Tiling, including wall tiling/floor tiling
Carpentry & joining work (new work scope)
Plumbing and drainage work (New work scope)
Disinfection of water pipe work (require MSDS of disinfectant)
Soil drainage – Sewer + Pipe + drain fittings
Water supply
Removal and erecting fences
Installation of fire appliances "CHUBB"
Boundary & yard walls / palisade fencing
Aprons – compaction of surfaces
Construction of generator plinth
Signage
Construction & installation of steel canopies with roof coverings

3. Health and safety risks

The following are potential risks associated with the above work activities:

• Falls from height
• Exposure to electricity. Overhead and underground cables
• Proximity to flammable or combustible materials
• Climbing steps and working platforms
• Risk of eye injury from flying particles and dust.
• Cancer risk from Exposure to asbestos
• Slips trips and falls due to untidy work area
• Manual handling activities
• Using various types of machinery and tools.
• Moulds, fungi and bacteria.
• Dermatitis
• Cuts and abrasions
• Struck by machinery
• Loss of fingers/limbs
• Risk of pain or injury from performing repetitive tasks.
• Exposure to noise
• Struck by falling objects
• Risk of eye injury from solvent splashes or vapours
• Vibration white finger
• Hand and foot injury
• Sun exposure
Additional risks include

- Slipping / tripping hazards

- Fire
- Chemicals
- Moving parts of machinery
- Work at height
- Ejection of materials
- Pressure systems
- Vehicles
- Electricity
- Dust
- Fume
- Manual handling
- Noise
- Poor lighting
- Low temp
- Violence

4. Site specific health and safety requirements based on project scope.

1. The principal contractor and all his appointed contractors shall be registered with an appropriate Compensation Commissioner or similar insurer and have available a valid letter of good standing at all times.
2. Ensure SHE file submitted before work commences to SANBI OHS division for evaluation.
3. Ensure all employees undergo medical examination and are declared fit for the job they are employed for by a Medical Practitioner.
4. All employees under his control undergo company specific induction and SANBI induction.
5. Ensure before work commences employees are trained on the health and safety risks associated with the work they are conducting.
6. Ensure employees are trained on company procedures, policies, method statements and informed of SHE requirements as per the specification.
7. Ensure legislative requirements are complied with during the duration of the contract and ensure that their employees comply also.
8. Ensure that you have signed the 37 (2) Agreement before any work commences and copy kept on their SHE file.
9. Ensure that 37(2) Agreement(s) are signed between yourself and any other sub-contractor which you may appoint.
10. Ensure that sub-contractors have valid Compensation Commissioner Letter of Good Standing.
11. Prevent any employee or visitor who is under the influence of any alcohol or drugs (in state of intoxication) from being allowed to site.
12. Ensure the safety of employees who are taking legal medication.
13. Must hand over a consolidated SHE file at the end of the contract.
14. Stop his/her employees who are doing unsafe acts or who are creating an unsafe environment.
15. Investigate all incidents and report to SANBI and ensure all reportable incidents as per the legislative requirement are complied with.
16. Ensure work is supervised by competent personnel and that work is done by competent employees.

17. Ensure pre-task risk assessment is done by a competent person and that employees are informed of the pre-task risks and the risk control measures.
18. Ensure tool box talks are conducted to communicate SHE issues in connection to the work being done and any other aspects.
19. Ensue that appointed personnel as per the SHE file are executing their duties as per the legal appointment.
20. Ensure first aid kit is made available in case of any emergency.
21. Ensure that housekeeping is maintained in good condition and that materials are store/stacked properly is designated areas.
22. Have sufficient waste receptacles and ensure the correct disposal of the different wastes.
23. Stop any work from being executed which is not in accordance with the rules for the site or which poses a threat to the health and safety of persons.
24. Service provider will be required to have health and safety policy on his SHE file
25. The Principal Contractor is responsible for the investigation of all accidents and/or incidents where employees and non-employees were injured to the extent that they had to receive medical treatment other than first aid
26. No fires or open flames are allowed on site unless directly used for construction purposes, e.g. acetylene blowtorch.
27. The Principal Contractor will establish a Personal Protective Equipment Policy and a Personal Protective Equipment study will be conducted to determine the types of Personal Protective Equipment (PPE) to be supplied related to the hazards and risks emanating from the tasks.
28. All employees must be provided with PPEs relevant to the hazard associated with task.
29. All employees shall, as a minimum, will be required to wear the following personal protective equipment for the duration of the contract on any of SANBI projects:

- Protective overalls;
- Protective footwear;
- Protective headwear; and
- Eye, face and ear protection.

30. A pre-emptive risk assessment will be required for any work to be carried out above **two metres** from the ground or any floor level. This work will be classified as “work in elevated positions”.
31. As far as is practicable, any person working in an elevated position will work from a platform, ladder or other device that is at least as safe as if he is working at ground level.
32. Prohibition signage must be displayed where work is performed.

5. Working at height

Where the work to be performed includes a requirement to work in elevated positions (more than 2 metres above ground, platform or walkway level) the Contractor shall, prior

to commencing work submit a comprehensive Fall Protection Plan in writing to the Responsible SANBI Representative for approval.

Every Fall Protection Plan shall include the following minimum requirements:

- Designation of a Competent Person responsible for the oversight and supervision of all elevated work;
- A risk assessment of all work to be carried out from an elevated position including the procedures and precautionary measures to address the identified risks per task or location;
- The process for evaluation of the employees' physical and psychological fitness to perform work in elevated positions and records thereof;
- The programme for training employees to work in elevated positions including specific instruction in the correct use of fall protection equipment and records of all training given;
- The procedure and requirements for the inspection, testing and maintenance of all fall protection equipment;
- The use of lifelines in situations where safety may be compromised by frequent attaching and detaching of lanyards from the structure;
- Provisions to prevent tools and other objects falling from elevated positions onto persons below;
- A specific requirement to stop work at elevated positions during inclement weather;
- A fall rescue and response plan;
- The process for review, amendment and maintenance of the Fall Protection Plan as and when required;
- Measures in place to ensure ongoing compliance with the requirements of the Fall Protection Plan by all affected employees.

Where work results in circumstances where a person can fall through or from a floor, working platform etc. adequate rigid barriers and, where appropriate, suitable warning signs shall be erected to prevent persons from falling.

All floor or wall openings and platforms that expose workers to a fall of more than 2 meters shall be covered or protected by guard-rails.
Where a Contractor is required to remove a guard-rail or protective covering and is exposed to a fall hazard, employees must firstly be protected against falling by the use of fall arrest equipment. If the area is to be left unattended for any period or reason or upon completion of the task, the guard-rail or covering must be replaced in a securely fastened state or the opening effectively barricaded.

6. Scaffolding

All scaffolding used on site shall be designed, erected, inspected, used and dismantled in accordance with internationally accredited / recognised standards.
Scaffolding shall be erected, inspected and dismantled under the direct supervision of a competent person specifically trained and experienced in such work and who has been designated in writing by the contractor for this purpose.

Every scaffold shall be inspected by a competent person at the time of erection, not less than once per week whilst in use and immediately after inclement weather. The findings of any inspection shall be recorded in a Scaffold Register which shall be open to inspection by the Responsible SANBI Representative.

Scaffolding inspections shall include, but not be limited to base plates, sills, bracing, tie-ins, planking, access ladders to working levels, guard-rails (handrails, mid-rails, and toe-board), anchorage to building structure, etc.

7. Roofing and roof work

In addition to the requirements of the Fall Protection Plan referred to above, the following additional requirements are required for all roofing work or when working on top of any roof:

- Safe access in the form of appropriate ladders and platforms;
- Use of roof ladders / roof planks set across support structures to provide safe footing and prevent workers from stepping directly onto roofing materials;
- Adequate provision for the safe transfer of goods, tools and materials to and from ground level;
- Provision of rails and toe-boards as appropriate to prevent tools and materials rolling, sliding or falling off the roof.

8. Ladders

Every Contractor shall ensure that ladders brought on site for use are constructed of suitable material for the area in which they are to be used, of sound construction and are safe for use. The Contractor shall demonstrate a system of routine inspection and maintenance for all ladders used on site.
“Home-made” ladders are NOT permitted.
Wooden ladders may not be painted save with a clear wood preservative or varnish.
Every ladder shall be fitted with non-slip safety devices at the bottom and a suitable means for lashing or otherwise securing the top.
All persons who may be required to use ladders in the performance of their work shall be trained and instructed in the safe used thereof and in recognition of the hazards associated with their use. Any ladder that is defective or unsafe for use shall be

withdrawn from use and repaired promptly. Any ladder which cannot be repaired shall be destroyed to prevent unauthorised further use

9. Permit to work (intervention authorisation)

A Permit to Work system is in place on all SANBI sites. All requests for Permits to Work shall be channelled through the Responsible SANBI Representative. The Contractor must ensure that all Permits to Work are properly completed and duly authorised by the appropriate SANBI signatories before commencing with the work in question. All requirements stated in the Permit must be fully complied with. Activities that require a permit to work include but are not limited to:

- hot work;
- working in confined spaces;
- working at heights;
- excavation work;
- site clearing;
- demolition work;

10. Excavation, trenching and shoring

No digging or surface excavation work may be undertaken unless an Excavation Permit has been issued in compliance with the SANBI Permit to Work system.

Precautions shall be taken by the Contractor to prevent slumping of excavations, as well as to prevent rocks and loose material falling onto workers.

Excavations must be inspected daily by an appointed, competent excavation inspector.

All excavations must be securely (hard) barricaded to prevent accidental access to such excavations.

Solid barricading must be used at excavations in conjunction with orange snow-netting and warning signage where excavations exceed one metre in depth. Demarcation chevron tape may be used for barricading excavations not more than one metre in depth.

The Responsible SANBI Representative shall ensure that all practical attempts are made to locate and identify underground utilities prior to issuing the Excavation Permit.

Detailed specifications must be submitted to the Responsible SANBI Representative for all jobs requiring shoring before starting any excavation.

Contractor employees shall not enter trenches, ditches, or any other sub-surface area without specific instructions from their supervisor

All excavation, trenching, shoring, and backfilling shall be in accordance with International Construction Safety Codes. All contractor supervisors shall be familiar with these codes and direct workers accordingly.

Lighted or reflective barricades must be used where excavations encroach on any roadway.
All personnel bridges over trenching or excavation must be equipped with safety railings.

11. Lock-out / tag-out procedures

A lockout, tag and test procedure describes the requirements to ensure that all machinery or equipment with the potential for unexpected operation, movement, release of energy or the release of hazardous materials, have been locked out prior to work being performed on it. The Contractor shall familiarise himself with the SANBI procedure (available through the Responsible SANBI Representative) and shall at all times adhere to its requirements. The Responsible SANBI Representative must first be notified and approval granted before any equipment that comprises part of the finished work can be put into operation or energised.
Lock-out and tag-out procedures will be applied for the servicing and maintenance of machines and equipment in which the unexpected energising or start-up of the machines or equipment or the release of stored energy could cause injury or death to any personnel. An energy source includes any source of electrical, mechanical, hydraulic, chemical, thermal, stored, ionising and non-ionizing, or other energy.
The Responsible SANBI Representative is to identify all sources of energy which need to be locked out and communicate this to the Contractor Supervisor.
The Contractor must only use locks made by a reputable manufacturer when locking out any energy source at SANBI facilities. The Contractor will be responsible for the supply and control of all locks needed for lock-out.

All locks used for lock out at any SANBI facility will require a hard plastic tag. All lock-out tags will require the following information; Danger, Lockout, Contractor Company Name, Contract Supervisor Name, Contractors Site Phone Number. The Contractor will be responsible for supplying all tags needed for lockout.
The unauthorised removal of Lock-out locks is considered a serious safety violation and will be regarded as a breach of contract.
No work shall be performed on electrical equipment that is energised. Such equipment must be “locked out” prior to working on it.
Only grounded equipment shall be used for power supply. Plugs and cords shall be maintained in good repair. Where conditions dictate a ground fault interruption protection power supply shall be used.
Under no circumstance shall a connection be made to any power outlet except through an approved plug. Insertion of bare wires into any power outlet is strictly prohibited.

12. Portable electrical equipment

All Portable Electrical Equipment including personal items brought onto SANBI property shall be clearly identified on a register, inspected at intervals not exceeding 3 months and maintained in a safe working condition. The Contractor shall provide such register for inspection by the Responsible SANBI Representative on request.

SANBI reserves the right to immediately require the removal from its property of any portable electrical equipment which does not comply with SANBI safety requirements.

13. Tools and equipment

The Contractor shall ensure that all machinery, tools and equipment are inspected by a competent person, prior to delivery to site.
No machinery, tools or equipment will be allowed onto the work site that are sub-standard or pose a threat to the health and safety of any person.
All machinery, tools and equipment will be subject to inspection by the Responsible SANBI Representative or his delegate prior to use on site and at such intervals thereafter as he may determine.
All machinery, tools and equipment will be regularly inspected by a competent person appointed by the Contractor, as required by legislation and best practice.
Registers of such inspections will be kept.

All Contractors' tools and equipment will be marked and identified in such a manner that it can be easily traced.
The Contractor shall ensure that all relevant Safety signage is prominently displayed as required by legislation, the Responsible SANBI Representative and best practice. Symbolic PPE pictograms and No Unauthorised Entry signs are typical examples.

14. Motor vehicles and mobile equipment

Contractors' motor vehicles and other mobile equipment shall at all times be maintained in a safe and legally roadworthy condition and shall be suitable to the nature of the roads to be travelled.
All motor vehicles will be subject to an inspection by the Responsible SANBI Representative or his delegate prior to being allowed to be used on site.
All seats must be fitted with an approved seatbelt and seatbelts shall be worn by all persons in the vehicle at all times whilst the vehicle is in motion.
All motor vehicles and mobile equipment must have headlights switched ON at all times whilst in motion.
The Contractor will provide suitable personnel carrying vehicles for transportation of the Contractors workforce and staff to, from and on the work site.
As far as possible, the carrying of personnel in the open load bin of any vehicle is actively discouraged. Where this is unavoidable for sound operational reasons, seats, seat belts and substantial roll-over protection should be fitted. As an absolute minimum, substantial "labour rails" must be installed. All persons so carried must remain seated on the bed of the load bin whilst the vehicle is in motion. No person shall be permitted to stand in the back of any motor vehicle whilst in motion.
The simultaneous transportation of personnel and unsecured tools or equipment is strictly prohibited.

15. Waste management

The following requirements shall be incorporated into the waste management plan

Solid Waste:

- Littering on site and the surrounding areas is prohibited.
- Clearly marked litterbins must be provided on site. The Contractor must monitor the presence of litter on the work sites as well as the construction campsite.
- All bins must be cleaned of litter regularly.
- All waste removed from site must be disposed at a municipal/permitted waste disposal site.
- Excess concrete, building rubble or other material must be disposed of in areas designated specifically for this purpose and not indiscriminately over the construction site.
- The entire works area and all construction sites must be swept of all pieces of wire, metal, wood or other material foreign to the natural environment.
- Contaminated soil must be treated and disposed of at a permitted waste disposal site, or be removed and the area rehabilitated immediately.
- Waste must be recycled wherever possible.

Hazardous Waste:

- No hazardous materials must be disposed of in the veld or anyplace other than a registered landfill for hazardous material. Hazardous waste must be stored in containers with tight lids that must be sealed and must be disposed at an appropriately permitted hazardous waste disposal site. Such containers must not be used for purposes other than those originally designed for. The service provider must maintain a hazardous material register.

16. General competence requirement

The Service provider shall ensure that his personnel and other contractors' personnel are trained and competent to carry out work safely and without risk to health has been completed before work commences. The service provider shall ensure that follow-up and refresher training is conducted as the work progresses and whenever the scope or nature of the work changes

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