

**KWAZULU-NATAL PROVINCIAL ADMINISTRATION**

**DEPARTMENT OF WORKS**

**GENERIC CONSTRUCTION SAFETY, HEALTH  
AND ENVIRONMENTAL SPECIFICATION**

**EXPLANATORY NOTES TO BIDDERS**

- (1) This document should be used by a Bidder as the basis for the proposed project specific "Construction Phase Safety, Health and Environmental Plan" which is required to be submitted by a Bidder at the time of bid. The Bidder is therefore required to study this document together with the drawings issued with the bid document – see clause 8 of the Notes to Bidders included in the bid document and based on the Bidder's assessment of the work involved in the project, prepare and submit the required project specific "Construction Phase Safety, Health and Environmental Plan" required to be submitted at the time of bid.

Bidders are advised that failure to submit an acceptable project specific "Construction Phase Safety Health and Environmental Plan" together with the bid will invalidate the bid.

- (2) The following definitions are applicable:

CEO	:	The Chief Executive Officer of the Principal Contractor or person authorized to sign the bid and all contractual documentation on behalf of the Principal Contractor.
Client	:	The KwaZulu-Natal Provincial Department of Works
Contractor	:	The entity to whom the contract for the specific project has been awarded.
Construction Regulations or Con. Regs	:	Means the Regulations published in Government Gazette No. 25207 dated 18 July 2003 and amendments thereto.
CSHEP	:	Construction Phase Safety, Health and Environmental Plan.
H & S	:	Health and Safety
OHS Act	:	Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and amendments thereto.
Principal Contractor	:	The entity to whom the contract for the specific project has been on.
SANS	:	South African National Standard.
SHE	:	Safety, Health and Environmental.



**GENERIC PRE-CONSTRUCTION SAFETY , HEALTH AND ENVIRONMENTAL  
SPECIFICATION IN TERMS OF THE  
OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO. 85 OF 1993) AND THE  
REGULATIONS MADE IN TERMS OF THE ACT.**

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## **1. INTRODUCTION AND BACKGROUND**

### **1.1 Background to the Pre-Construction Safety, Health and Environmental Specification .**

- 1) In terms of Regulation 4(1)(a) the Construction Regulations dated 18 July 2003, published in Government Gazette No. 25207 the onus is placed on the Client to prepare a Pre-Construction Health and Safety Specification, highlighting all risks not successfully eliminated during design. Section 37.2 of the OHS Act requires the Department of Works as an Employer (the Client) to enter into a written agreement with the Contractor (Mandatory) as far as arrangements and procedures are concerned to ensure that the Contractor complies with the requirements of the Act and the Regulations published in terms thereof.
- 2) This document serves to address all the abovementioned requirements as well as ensuring that the Contractor's activities do not pose a risk to the environment, and by submission of a bid the Bidder undertakes to abide with the conditions as stipulated by the Department of Works hereinafter referred to throughout this document as the Client.
- 3) The documentation contained herein is intended to give the Client or its duly appointed representative the required information to be able during the bid adjudication stage to evaluate the Bidder's competency and resources as is required by Regulation 4(4) of the Construction Regulations and to determine the Bidder's suitability to execute the work included in the project in a safe and healthy manner.
- 4) When submitting his/her/their bid the Bidder must supply the Client with the following a detailed Site Safety Plan indicating how the successful Bidder will manage all Safety, Health and Environmental aspects whilst working on the Client's premises or on premises which will be under the successful Bidder's control which must be based on the contents of this document as is required by Regulation 5 (1) of the Construction Regulations. The Site Safety Plan must incorporate a preliminary Hazard Identification and Risk Analysis – see 2.5.7 hereof.

No claim for additional costs incurred by a Contractor for compliance with the OHS Act, the Regulations in terms thereof or the Construction Regulations will be entertained.

- 5) No approval or acceptance of any document required by this Specification shall be construed by the Contractor as absolving the Contractor from achieving the required level of performance and compliance with legal requirements whatsoever.
- 6) The Contractor is an employer in his/her/their own right and therefore must assume all the responsibilities as required from any legal obligation imposed on him/her or them.

### **1.2 Purpose of the Pre-Construction Safety, Health and Environmental Specification.**

The purpose of this Specification is to assist in achieving compliance with the OHS Act and the Construction Regulations in order to reduce incidents and injuries. The Pre-Construction Safety, Health and Environmental Specification sets out the requirements to be followed by the Principal Contractor and Sub- Contractors so that the Health and Safety of all persons potentially at risk, and the potential risk to the environment may receive the same priority as other facets of the project such as Time, Cost and Quality.

### **1.3 Implementation of the Pre-Construction Safety, Health and Environmental Specification**

This Specification forms an integral part of the contract documentation and the Principal Contractor is required to use it at pre-bid phase when drawing up the project-specific Construction Phase Health, Safety and Environmental Management Plan as indicated above. The Principal Contractor must forward a copy of this Specification to all Sub-Contractors at their bidding stage so that they can in turn prepare Safety, Health and Environmental Management Plans relating to their operations.

## **2. PRE-CONSTRUCTION SAFETY, HEALTH AND ENVIRONMENTAL SPECIFICATION .**

### **2.1 Scope**

This Specification covers the requirements for eliminating and/or mitigating incidents and injuries on projects.

This Specification also addresses legal compliance, hazard identification and risk assessment, risk control, and the promotion of a Health and Safety culture amongst those working on the project. This Specification also makes provision for the protection of persons other than employees.

### **2.2 Contractual Issues .**

- 1) Due to fact that this document is based on legislative requirements, the Client requires that all Contractors comply with the requirements of this document and all other relevant legislative requirements not covered by this document.
- 2) The Client or its duly appointed representative reserves the right to stop any Contractor or Sub-Contractor from working whenever Safety, Health or Environmental requirements are being violated. Any resultant costs of such work stoppages will be for the relevant Contractor's account.
- 3) The requirements as specified by the Client in this document must not be deemed to be exhaustive and the Client reserves the right to make changes as and if the Client deems fit.
- 4) The Client will not entertain any claim of any nature whatsoever which arises as result of costs incurred or delays being experienced due to the Contractor not complying with the requirements of this document and/or any other applicable legislative requirements imposed on the Contractor.

### **2.3 Safety, Health and Environmental Standards and Procedures .**

- 1) The Principal Contractor and Sub-Contractors must ensure that all work performed by him/her is executed in accordance with work procedures which comply with accepted safety practices and applicable Safety, Health and Environmental legislation.
- 2) Procedures as indicated above may be the Contractor's own procedures on condition that they comply with the conditions as stipulated above.
- 3) Where procedures have been specified by the Client in the contents of this document, such procedures must be adhered to unless otherwise agreed to with the Client or it's duly appointed representative.

### **2.4 Interpretations**

#### **2.4.1 Application**

This specification is a compliance document drawn up in terms of South African legislation and is therefore binding on both the Client and Contractors. It must be read in conjunction with relevant legislation.

#### **2.4.2 Definitions**

- 1) The definitions as listed in the OHS Act and Construction Regulations shall apply unless otherwise stipulated.
- 2) Any reference to "The Contractor" includes – the Principal and Sub - Contractor unless otherwise stipulated.

### **2.5 Minimum Administrative Requirements**

#### **2.5.1 Notification of Intention to Commence Construction Work**

- 1) The Principal Contractor shall notify the Provincial Director of the National Department of Labour in writing before construction work commences in the format of Annexure A. A copy of such notification must be forwarded to the Client prior to the commencement of construction work.
- 2) Copies of such notification can be obtained from any Department of Labour Office.

**2.5.2 Assignment of Contractor's Responsible Persons to Supervise Safety , Health and Environmental Management on Site**

- 1) The Principal Contractor shall submit in the format of Annexure B, proof of all supervisory as well as any other relevant appointments as is required by the OHS Act and the Construction Regulations.
- 2) It is acknowledged that the Principal Contractor may need to allocate more than one appointment to certain staff members. This practice may only take place if Safety, Health and Environmental Standards would not be negatively affected. Should the Client or its Representative deem such practice as having a negative affect on Safety, Health and Environmental Standards, then alternative arrangements will have to be made at no cost to the Client.
- 3) A Safety, Health and Environmental Officer must be appointed by the Principal Contractor subject to the following conditions:
  - The person must either have completed a SAMTRAC (Safety Management Training Course), which is administered by NOSA, a 3 Week SHE Management Course, which is administered by Lexis Nexis Butterworths or other course approved by Client the as a minimum requirement.
  - The following criteria shall be used to determine the status of a Site Safety, Health and Environmental Officer"
    - (a) Thirty to fifty employees on site- Part time Safety, Health and Environmental Officer spending not less than two full days a week on site; and
    - (b) Fifty one or more employees on site- A Safety, Health and Environmental Officer full time on site.
- 4) Should the Client or its Representative determine that a full time Safety, Health and Environmental Officer be appointed, such requirement will have to be met.

**2.5.3 Competency of Contractor's Appointed Competent Persons**

- 1) Contractor's competent persons for the various risk management portfolios shall fulfill the criteria as stipulated under the definition of "Competent Person" in accordance with the Construction Regulations and the OHS Act.
- 2) The Client reserves the right to require levels of Competency, which exceeds the requirements as stipulated by the Act and or Construction Regulations.
- 3) In the event of the Client requiring additional levels of Competency, alternative arrangements will have to be made.

**2.5.4 Compensation for Occupational Injuries and Diseases Act 1993 (Act No. 130 of 1993) (COID Act)**

- 1) The Principal Contractor warrants that all employees are fully covered in terms of the COID Act and that such cover shall remain in force for the duration of the contractual relationship with the Client whilst working on the Client's premises or premises under the Client's control.

- 2) The Principal Contractor must supply proof of such insurance cover to the Client at the time of bid.
- 3) The Principal Contractor undertakes to ensure that all Sub-Contractors appointed by the Principal Contractor will be fully covered in terms of the COID Act, and that such cover shall remain in force for the duration of their contractual relationship with the Principal Contractor
- 4) The Principal Contractor must also maintain additional insurance cover that will adequately make provisions for any losses and/or his employee's acts and/or omissions whilst working on the Client's premises or on premises under the Client's control.

#### **2.5.5 Occupational Safety , Health and Environmental Policy**

- 1) The Bidder shall at the time of bid submit a Safety , Health and Environmental Policy signed by the Chief Executive Officer or legally competent person on behalf of the Principal Contractor.
- 2) The Policy must outline objectives and set out how they will be achieved and implemented by the successful Bidder.
- 3) A copy of such policy must later be included in the Site Safety Plan and the Site Safety File.

#### **2.5.6 Safety , Health and Environmental Organogram**

- 1) The Principal Contractor shall submit an Organogram outlining the Site Safety, Health and Environmental Management Structure including the relevant appointments / competent persons.
- 2) In cases where appointments have not been made, the organogram shall reflect the names of persons intended to be appointed to such positions.
- 3) The Site, Safety, Health and Environmental Management Organogram shall be updated at the Principal Contractor's cost when there are any changes in the Site Management Structure.

#### **2.5.7 Preliminary Hazard Identification and Risk Analysis and Progress Hazard Identification and Risk Analysis**

- 1) A Generic Hazard Identification and Risk Analysis can be found in the format of Annexure D. This Hazard Identification and Risk Analysis is provided to make the Principal Contractor aware of potential Hazards, which could be present on the site and is not necessarily be comprehensive.
- 2) The Principal Contractor shall allow for and cause a Hazard Identification and Risk Analysis exercise to be performed by a Competent Person before commencement of construction work, and the assessed risks shall form part of the Construction Phase Health and Safety Plan submitted for approval by the Client. The Risk Assessment must include:
  - a) A list of hazards identified as well as potentially hazardous tasks;
  - b) A documented risk assessment based on the list of hazards and tasks;
  - c) A set of safe working procedures intended to eliminate, reduce and/or control the risks assessed;
  - d) A monitoring and review procedure of the risk assessment as the risks change.
- 3) The Principal Contractor shall allow for and ensure that all Sub-Contractors are informed, instructed and trained by a Competent Person/s regarding hazards, risks and related safe work procedures before any work commences and thereafter at regular intervals as the risks change and as new risks develop.



- 4) The Principal Contractor shall allow for and be responsible for ensuring that all persons who could be negatively affected by construction operations are informed and trained according to the hazards and risks and are conversant with the Safe Work Procedures, control measures and other related rules (for example "tool box talk" strategy to be implemented).
- 5) Should the Client or its duly appointed Representative identify alternative hazardous activities performed by the Principal Contractor or its Sub-Contractors on site for which a Risk Assessment was not performed, then the Principal Contractor will be required to perform such an exercise, at the Principal Contractor's cost, before continuing such work.

#### **2.5.8 Safety, Health and Environmental Representative(s)**

- 1) The Principal Contractor and Sub-Contractors shall allow for and ensure that Safety, Health and Environmental Representative(s) who, after consultation, have been appointed and trained to carry out their functions.
- 2) The appointments must be in writing and the Safety, Health and Environmental Representative shall carry out regular inspections, keep records and report all findings to the Responsible Person forthwith and at Safety, Health and Environmental meetings.

#### **2.5.9 Safety, Health and Environmental Committees**

The Principal Contractor shall ensure that project Safety, Health and Environmental Meetings are held monthly or as deemed necessary by the project requirements.

- 1) Minutes must be kept on record and filed in the Site Health and Safety File.
- 2) Meetings must be organized and chaired by the Principal Contractor's Responsible Person.

#### **2.5.10 Health and Safety Training**

##### **2.5.10.1 Induction**

- 1) The Principal Contractor shall allow for and ensure that all site personnel undergo a site-specific Safety, Health and Environmental Induction Training Session before starting work. A record of attendance shall be kept in the Health and Safety file. **The Principal Contractor must arrange a suitable venue to provide this training.**
- 2) All visitors to the site must also be subjected to site-specific induction training highlighting items such as steps to follow in the event of an emergency, restricted areas and so on.

##### **2.5.10.2 Awareness**

The Principal Contractor shall ensure that, on site, regular "Toolbox Talks" take place. These talks must deal with risks relevant to the construction work at hand.

##### **2.5.10.3 Competency**

- 1) All "Competent Persons" shall have the knowledge, experience, training, and qualifications which are specifically applicable to the work they have been appointed to supervise, control, and execute.
- 2) The abovementioned competency requirements will be assessed on a regular basis by the Client, by means of Audits, Progress Meetings, and any other means deemed appropriate by the Client.

- 3) The Principal Contractor is responsible for ensuring that competent Sub-Contractors are appointed to carry out construction work.

#### **2.5.11 General Record Keeping**

- 1) The Principal Contractor shall keep and maintain Safety, Health and Environmental records to demonstrate compliance with this Specification, the OHS Act and with the Construction Regulations.
- 2) The Principal Contractor shall ensure that all records of incidents/accidents, training, inspections, audits, and the like are kept in a Site Health and Safety file held in the Site Office.
- 3) The Principal Contractor must ensure that every Sub-Contractor opens their individual Site Health and Safety file, maintains the file and makes it available on request by any duly authorized person.

#### **2.5.12 Safety, Health and Environmental Audits, Monitoring and Reporting**

- 1) The Client shall at least once a month during the duration of the contract conduct Safety, Health and Environmental audits of the work operations, including a full audit of physical site activities, as well as an audit on the administration of Health and Safety.
- 2) The Principal Contractor must allow for and conduct similar audits on all Sub-Contractors appointed by the Principal Contractor and forward copies of all reports to the Client or its representative within seven working days of completion of the audits and file copies on the Site Health and Safety File.
- 3) Copies of the Client's audit reports will be forwarded to the Principal Contractor and must be kept in the Site Health and Safety File.

#### **2.5.13 Emergency Procedures/Plans**

- 1) The Principal Contractor shall allow for and submit a detailed Emergency Procedure/Plan for approval by the Client prior to commencement of work on site. The procedure shall detail the response plan/s including the following key elements:
  - List of key competent personnel;
  - Details of emergency services;
  - Actions or steps to be taken in the event of the specific types of emergencies;
  - Information on hazardous material/situations.
- 2) Emergency Procedures/Plans shall relate to, but shall not be limited to events such as fire, spills, use of hazardous substances, bomb threats, major and minor incidents/accidents and any other anticipated emergencies.
- 3) Emergency Procedures/Plans must be developed by a competent person such as a Safety, Health and Environmental Officer or in the absence of a Safety, Health and Environmental Officer by the Construction Work Supervisor.
- 4) Emergency Procedures/Plans must form part of the Agenda of monthly safety meetings as the Procedures/Plans would have to be revisited on a continuous basis due to the changing environment on construction sites.
- 5) A contact list of all service providers (Fire Department, Ambulance, Police, Medical and Hospital, etc) must be maintained and be available to site personnel.
- 6) The Principal Contractor shall advise the Client in writing, immediately after the event, of any emergencies, together with a record of action taken.

#### **2.5.14 First Aid Boxes and First Aid Equipment**

- 1) The Principal Contractor and Sub-Contractors shall each appoint in writing First Aider(s) in terms of Regulation 3 of the General Safety Regulations published in Government Notice No. R. 1031 dated 30 May 1986 and amendments thereto.
- 2) The appointed First Aider(s) must be sent for accredited first aid training should they not have received such training prior to commencement of work on site, with any related costs being for the account of the Principal Contractor or Sub-Contractor concerned.
- 3) Valid certificates to be kept on site in the Site Health and Safety File.
- 4) The Principal Contractor shall allow for and provide an on-site First Aid Station with first aid facilities, where required, including first aid boxes which must be kept adequately stocked at all times.
- 5) All Sub- Contractors with more than five employees on site shall allow for and supply their own first aid boxes.
- 6) In the event of hazardous chemical substances being present on site, first aiders must be trained to address any incidents of accidental exposure and their first aid kits be stocked accordingly.

#### **2.5.15 Accident / Incident Reporting and Investigation**

- 1) Injuries sustained on the site are to be categorized into the following categories:
  - 1) first aid;
  - 2) medical attendance (Doctor);
  - 3) disabling; and
  - 4) fatal injuries.
- 2) All Sub- Contractors have to report on any of the four categories of injuries to the Principal Contractor as soon as is reasonably practicable after the event causing injury and in any event not more than five working days after the event.
- 3) The Principal Contractor must stipulate in the Construction Phase Health and Safety Plan how each of these categories would be handled.
- 4) When reporting injuries to the Client, these categories shall be used.
- 5) All injuries will be investigated by the Principal Contractor or his/her Competent Person, with a report being forwarded to the Client forthwith.
- 6) The Principal Contractor must on at least a monthly basis report all injuries sustained on site to the Client in the form of a detailed injury report.
- 7) All incidents as described in Section 24 of the OHS Act must be reported in the prescribed period and manner to the National Department of Labour. Copies of Section 24 reports, including WCL 1 & 2 forms must be forwarded to the Client.

#### **2.5.16 Hazards and Potentially Hazardous Situations**

- 1) The Principal Contractor shall immediately notify other Sub-Contractors as well as the Client of any hazardous or potentially hazardous situations that may arise during performance of construction activities.
- 2) Should a hazardous situation require work stoppages, the work must be stopped and corrective steps taken such as the issue of Written Safe Work Procedures and the issue of Personal Protective Equipment.

### **2.5.17 Personal Protective Equipment (PPE) and Clothing**

- 1) The Principal Contractor and all Sub-Contractors shall allow for and ensure that all site employees are issued and wear, for example, Hard Hats, Safety Boots/Shoes, Overalls, etc.
- 2) The Principal Contractor and all Sub-Contractors shall allow for and make provision and keep adequate quantities of SABS approved PPE on Site at all times.
- 3) The Principal Contractor and all Sub-Contractors shall clearly outline procedures to be taken when PPE or Clothing is:
  - Lost or stolen;
  - Worn out or damaged.
- 4) The Principal Contractor must at all times ensure that no person enters the Site without the required Personal Protective Equipment.
- 5) Visitors to the Site must be provided by the Principal Contractor with the required PPE such as Hard Hats, Earmuffs and Eye Protection.
- 6) Records of all PPE issued to staff must be kept on Site in the Site Health and Safety File.
- 7) Employees are to be made conversant with the purpose of PPE and where and when it is required to be used by employees.
- 8) Safety belts are not to be allowed on Site only double lanyard safety harnesses are permitted.
- 9) Suitable eye protection must at all times be worn by employees when performing, for example, grinding, chipping, chasing and other similar activities.
- 10) In the event that onlookers may be struck by flying objects as a result of work being performed, allowances must be made for the provision of suitable temporary screens.
- 11) Any person performing welding or brazing work must wear suitable eye protection, gloves, aprons, and spats. Suitable screens are to be provided to protect onlookers from the harmful rays associated with such activities.
- 12) When employees are required to work with corrosive liquids, allowance must be made for suitable eye protection, gloves and acid resistant overalls to be provided.
- 13) Ear protection must be worn in designated noise zones (in excess of 85dB)
- 14) Suitable respirators must be provided to all employees and visitors required to be working in or entering areas where toxic vapors could be present.
- 15) All employees working in an elevated position (2m or higher) or where the potential exists that such employees may fall, each such employee must be provided with a suitably secured safety harness.
- 16) Any person refusing to wear Personal Protective Equipment must be removed from the premises.

### **2.5.18 Safety , Health and Environmental (SHE) Signage**

- 1) The Principal Contractor shall allow for and provide adequate on-site SHE signage for example - "no unauthorized entry", "report to site office", "site office", "beware of overhead work", "hard hat area", etc.
- 2) Signage shall be erected and maintained at all entrances to the site as well as on site in strategic locations e.g. access routes, stairways, entrances to structures and buildings, scaffolding, and other potential risk areas/operations.

- 3) In the event of work being performed on premises displaying existing signage such as no-parking, speed limits and so on, the Principal Contractor must abide by the requirements of such signage, except if otherwise instructed.

#### **2.5.19 Permits**

- 1) The Principal Contractor shall prepare and issue the required written permits relating to but not limited to the following:
  - Work for which a fall prevention plan is required;
  - Use of cradles; and
  - Electrical work (both temporary and permanent)
- 2) The Principal Contractor must ensure that where permits are required that they are properly implemented and adhered to.

### **2.6 Physical Requirements – To Be Addressed by Bidders in Their Project-Specific Documentation**

#### **2.6.1 Demolition Work**

- 1) Prior to any demolition work being carried out, which must be carried out in a pre-determined manner specified by the Client, the Principal Contractor shall submit a "Safe Working Procedure" for approval by the Client.
- 2) Such "Safe Work Procedures" must either be submitted with the "Site Safety Plan" at the time of bid or be submitted to the Client before demolition work commences.
- 3) Approval will then be given to the Principal Contractor to proceed with the demolition work.
- 4) The Principal Contractor shall ensure that demolition work complies with the Construction Regulations.
- 5) In the event that a structure identified for demolition incorporates substances such as lead or asbestos it must be performed within the requirements of the applicable legislative requirements.

#### **2.6.2 Excavations, Shoring, Dewatering or Drainage**

- 1) All excavation work must be performed under the supervision of a Competent Person as specified in Annexure B of this document and the Construction Regulations.
- 2) Adequate Shoring and Bracing must be allowed for and be provided where required to ensure that the health and safety of the employees working in such excavations is not put at risk.
- 3) Adequate provision must be made to ensure that water is drained from excavations where water may enter such excavations as a result of seepage or rain.
- 4) All excavations made by the Principal Contractor and any Sub-Contractor must be clearly demarcated and protected to prevent accidental access.
- 5) Barricading tape may only be used to make solid barricading more visible and may not be used as a means of barricading.
- 6) In addition to the abovementioned the requirements of Regulation 11 of the Construction Regulations must be adhered to.

### **2.6.3 Edge Protection**

- 1) All open edges posing the risk of injuries or damage to equipment must be adequately guarded, fenced or barricaded to prevent injuries or damage to equipment.
- 2) Barricading tape is not deemed to be suitable and may only be used in addition to guards, fences or barricades as indicated above.

### **2.6.4 Explosives and Blasting**

- 1) All explosives must be transported or stored according to the requirements of SANS 0228.
- 2) Written approval must be obtained from the Chief Inspector : Occupational Health and Safety prior to any blasting activities taking place.
- 3) A copy of such written approval from the National Department of Labour's Chief Inspector : Occupational Health and Safety must be supplied to the Client prior to Blasting.
- 4) On receipt of the approval referred to above, the Principal Contractor shall prepare and issue the necessary permit in terms of which all the necessary precautions required to be taken are specified in writing.
- 5) Prior to blasting all legislative requirements must have been met – for example - a siren must be sounded, warning flags must be erected and guards be placed at strategic location points to prevent accidental entry to the blasting area.

### **2.6.5 Stacking of Materials**

- 1) Stacking and storage of materials must be performed under the supervision of a "Competent Person" who has been appointed in writing as required by Annexure B.
- 2) Storage areas must be designated, kept neat and under control. In addition to the abovementioned the requirements of General Safety Regulations published in Government Notice No. R.1031 dated 30 May 1986 and amendments thereto must be complied with.
- 3) In the event that unauthorized persons enter an area where materials are stacked, such area must be barricaded off to prevent access to such area.

### **2.6.6 Speed Restrictions and Protections**

- 1) Unless otherwise stipulated, the maximum speed limit on site must be limited to 10 km/h.
- 2) Vehicle movement routes on site must be clearly indicated where applicable.
- 3) Signage to ensure the safe movement of vehicles on site, as well as to ensure the health and safety of all employees and visitors on site, must be displayed in strategic locations.

### **2.6.7 Hazardous Chemical Substances (HCS)**

- 1) All employees required to use Hazardous Chemical Substances or products containing Hazardous Chemical Substances must be adequately and comprehensively trained with regard to the requirements of the Hazardous Chemical Substances Regulations as published in Government Notice No. R. 1179 dated 25 August 1995 and amendments thereto, the potential sources of exposure and the potential risks to their health caused by exposure.
- 2) In addition to the abovementioned, Material Safety Data Sheets must be kept on site for all materials, which may contain hazardous chemical substances.

## **2.6.8 Asbestos**

- 1) Asbestos work may only be performed subject to prior notification of the Provincial Director : Occupational Health and Safety, in the National Department of Labour, in writing.
- 2) Proof of such notification must be supplied to the Client prior to work proceeding.
- 3) All employees must be informed and receive training on aspects such as the contents and scope of the Asbestos Regulations as published in Government Notice No. R. 155 dated 10 February 2002 and amendments thereto, the potential risks of exposure to asbestos, precautionary measures that employees have to take and all other requirements deemed necessary to provide a safe and healthy environment for all employees as specified by the Asbestos Regulations referred to above.

## **2.7 Plant and Machinery**

### **2.7.1 Construction Plant**

All Construction Plant must comply with and be used in conjunction with the requirements of Regulation 21 of the Construction Regulations and in particular all records of inspections rendering such plant safe must be kept on site.

### **2.7.2 Vessels under Pressure (VUP)**

The Principal Contractor and all relevant Sub- Contractors shall comply with the Vessels under Pressure Regulations as published in Government Notice No. R. 1625 dated 4 October 1996 and amendments thereto including:

- Allowing for and providing competency and awareness training to the operators;
- Allowing for and providing PPE;
- Inspecting equipment regularly and keeping records of inspections;
- Allowing for and providing appropriate fire fighting equipment.

### **2.7.3 Fire Extinguishers and Fire Fighting Equipment**

- 1) The Principal Contractor and Sub-Contractors shall allow for and provide or ensure adequate provision of regularly serviced temporary fire fighting equipment located at strategic points on site, specific for the classes of fire likely to occur.
- 2) The appropriate notices and signs must be allowed for and be erected as required.
- 3) Contractors may not utilize fire protection equipment belonging to the Client without prior consent.

### **2.7.4 Hired Plant and Machinery**

- 1) The Principal Contractor and Sub-Contractors shall ensure that any hired plant and machinery used on site is safe for use.
- 2) The requirements as stipulated by the OHS Act and Construction Regulations shall apply.
- 3) The Principal Contractor shall ensure that operators hired with machinery are competent and that certificates are kept on site in the Site Health and Safety File. All relevant Sub-Contractors must ensure the same.

### **2.7.5 Scaffolding / Working at Heights**

- 1) Working at heights includes any work that takes place in an elevated position in excess of 2m above the level below.
- 2) The Principal Contractor must allow for the preparation of and submit a risk-specific fall prevention plan in accordance with the Construction Regulations before this work is undertaken.
- 3) The fall prevention plan must be approved by the Client before work may commence.

#### **2.7.6 Formwork and Support Work for Structures**

- 1) The Principal Contractor shall ensure that the provisions of Regulation 10 of the Construction Regulations are adhered to.
- 2) These provisions include but are not be limited to ensuring that all equipment used is examined for suitability before use; that all Formwork and Support Work is inspected by a "Competent Person" immediately before, during and after placement of concrete or any other imposed load and thereafter on a daily basis until the Formwork and Support Work has been removed.
- 3) Records of all inspections must be kept in a register on site.

#### **2.7.7 Lifting Machines and Tackle**

- 1) The Principal Contractor and Sub-Contractors shall ensure that lifting machinery and tackle is inspected before use and thereafter in accordance with the Driven Machinery Regulations as published in Government Notice No. R. 298 dated 26 February 1988 and amendments thereto and Section 20 of the Construction Regulations.
- 3) There must be a competent appointed Lifting Machinery and Tackle Inspector on site who must inspect the equipment daily or before use, taking into account that:
  - All lifting machinery and tackle has a safe working load clearly indicated;
  - Regular inspection and servicing must be carried out;
  - Records are kept of inspections and of service certificates;
  - There is proper supervision in terms of guiding the loads that includes a trained banksman to direct lifting operations and check lifting tackle;
  - The tower crane bases have been approved by a professional engineer;
  - The operators are competent as well as physically and psychologically fit to work and be in possession of a medical certificate of fitness which must be available on site.

#### **2.7.8 Ladders and Ladder Work**

- 1) The Principal Contractor shall allow for and ensure that all ladders are inspected at least monthly, are in a good safe working order, are the correct height for the task, extend at least 1m above the landing, are fastened and secured and are placed at a safe angle.
- 2) Records of inspections must be kept in a register on site.

#### **2.7.9 General Machinery**

The Principal Contractor shall ensure compliance with the Driven Machinery Regulations as published in Government Notice No. R. 298 dated 26 February 1988 and amendments thereto, which include inspecting machinery regularly, allowing for and appointing a "Competent Person" to inspect and ensure maintenance, allow for supplying and issuing PPE and allowing for training those who use machinery.

#### **2.7.10 Portable Electrical Tools and Explosive Powered Tools**

- 1) The Principal Contractor shall ensure that use and storage of all explosive powered tools and portable electrical tools are in compliance with relevant legislation.



- 2) The Principal Contractor shall ensure that all electrical tools, electrical distribution boards, extension leads, and plugs are kept in a safe working order.
- 3) The Principal Contractor shall allow for and ensure the following:
  - That a "Competent Person" undertakes routine inspections and records are kept on site.
  - That only authorized trained persons use the tools.
  - That safe working procedures apply.
  - That awareness training is carried out and compliance is enforced at all times.
  - That PPE is provided and used.
  - That a register recording the issue and return of all explosive rounds is implemented and maintained, and
  - That signs are erected in the areas where explosive powered tools are being used.

#### **2.7.11 High Voltage Electrical Equipment Installations and Equipment**

- 1) All Contractors must be made aware of the presence and location of High Voltage Equipment such as underground cables and overhead lines, and ensure that the necessary precautionary steps are taken where work has to be executed in the vicinity of such equipment.
- 2) Precautionary measures such as Isolation and Lock-Out of electrical systems or the use of electrically isolated tools must be used.

#### **2.7.12 Public and Site Visitor Health and Safety**

- 1) The Principal Contractor shall ensure that every person working on or visiting the site, as well as the public in general, shall be made aware of the dangers likely to arise from site activities, including the precautions to be taken to avoid or minimize those dangers.
- 2) Appropriate Health and Safety Notices and signs shall be erected, but shall not be the only measures taken.

#### **2.7.13 Adequate Lighting**

All Contractors must allow for and ensure that adequate lighting is provided to allow for work to be carried out safely.

#### **2.7.14 Transportation of Workers**

- 1) The Principal Contractor and Sub-Contractors shall not:
  - Transport persons together with goods or tools unless there is an appropriate area or section of the vehicle in which to store such goods.
  - Transport persons on the back of trucks except if a proper canopy (properly covering the sides and top) has been provided with suitable seating areas.
  - Permit workers to stand or sit on the edge of the transporting vehicle.
  - Transport workers in LDVs unless they are closed/covered and have the correct number of seats for the passengers.
- 2) No driver may transport more than six people on the back of a 1 Ton LDV and more than four passengers on the back of an ½ Ton LDV.
- 3) The driver of any LDV may not permit more than two passengers to occupy the cab of any LDV.
- 4) All vehicles operated on the site must comply in all aspects with the requirements of the National Road Traffic Act 1996, (Act No 93 of 1996).
- 5) Drivers of such vehicles must have a valid drivers licence for the code of vehicle being driven by them.

- 6) No servicing of vehicles will be permitted on a Construction Site, which is occupied by staff working for the Client.
- 7) Servicing or repairs of vehicles on site may only take place if such activities are performed with the necessary procedures in place to prevent any harmful effects to the environment. All waste generated from servicing vehicles must be disposed of in accordance with relevant Environmental legislation.
- 8) In the event that Earth Moving Machinery is present on site the following must be adhered to:
  - Drivers of vehicles must be instructed to avoid parking behind earth moving machinery in order to ensure that their vehicles are visible to the operators of earth moving machinery.
  - Right of way must be afforded to earth moving machinery at all times.
  - Vehicles must only be permitted to park, where possible, in designated areas

## **2.8 Occupational Health and Environmental Management**

### **2.8.1 Occupational Hygiene**

- 1) Occupational exposure is a major problem and all Contractors must ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards.
- 2) All Contractors must prevent inhalation, ingestion and absorption of any harmful chemical or biological agents.
- 3) Site-specific health risks such as cement -dust, wood-dust, noise, etc., are set out in Annexure D but the risks are not limited to these items.
- 4) Water to be utilized for drinking purposes may only be drawn from taps designated for drinking water purposes. Fire hydrants and fire hose reels may not be utilized for drinking water purposes.

### **2.8.2 Environmental Management**

- 1) The Principal Contractor and Sub-Contractors shall take all precautionary steps to prevent any pollution of the Environment.
- 2) Any material which may have a harmful effect when disposed of by normal means must be disposed of in an appropriate manner to eliminate its harmful effect on the environment after disposal.
- 3) The Principal Contractor must allow for and ensure that adequate procedures are implemented and maintained to ensure that waste generated is placed in suitable receptacles and removed from the site promptly.
- 4) Plans to deal with spillages must be in place and maintained.
- 5) No waste materials (liquid or solid) may be disposed of in drains.
- 6) No burning of waste material may take place where such material being burned may result in pollution of the air or give off toxic vapours which could be harmful to the health of employees or any other person present on site.

### **2.8.3 Welfare Facilities**

- 1) The Principal Contractor must allow for and supply :
  - a) Sufficient toilets on site (1 toilet per 30 workers).

- b) Showers (1 for every 15 workers).
  - c) Changing facilities.
  - d) Hand washing facilities, soap, toilet paper, and hand drying materials.
  - e) Waste bins which must be strategically placed and emptied regularly.
  - f) Safe, clean storage areas for workers to store personal belongings and personal protective equipment.
- 2) Workers must not be exposed to hazardous materials/substances while eating and must be provided with sheltered eating areas.

### **2.8.3 Alcohol and other Drugs**

- 1) No alcohol and other drugs will be allowed on site without the express permission of the Principal Contractor.
- 2) No person may be under the influence of alcohol or any other drugs while on the construction site.
- 3) Any person on the construction site who is on prescription drugs must inform his/her Employer accordingly and the Employer shall in turn report this to the Principal Contractor forthwith.
- 3) Any person on the construction site who is suffering from any illness/condition that may have a negative effect on his/her safety performance must report this to his/her Employer, who in turn must report this to the Principal Contractor forthwith.
- 5) Any person on the construction site who is suspected of being under the influence of alcohol or other drugs must be sent home immediately and the instructed to report back the next day for a preliminary inquiry. A full disciplinary procedure must be followed by the Contractor concerned and a copy of the disciplinary action must be forwarded to the Principal Contractor for his records.

## ANNEXURE A

The Principal Contractor must submit proof of compliance with Annexure A with the Construction Phase Health and Safety Plan (CSHEP) where applicable.

<b>SHE Item No.</b>	<b>Requirement</b>	<b>OHS Act Requirement</b>	<b>Submission Date</b>
2.5.1	Notification of Intention to Commence Construction/Building Work	Complete Annexure A of Construction Regulations	Before commencement on site
2.5.2	Assignment of Responsible Persons	All relevant appointments as per OHS Act, Con Regs. and Annexure B hereof	Together with CSHEP
2.5.3	Competence of Responsible Persons	Client Requirement & OHS Act	Together with CSHEP
2.5.4	Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 (COID) Act	Con Regs. and Client Requirement	Together with CSHEP
2.5.5	Occupational Health and Safety Policy	OHS Act	Together with CSHEP
2.5.6	Health and Safety Organogram	Client Requirement	Together with CSHEP
2.5.7	Initial Hazard Identification and Risk Assessment	Con Regs.	Together with CSHEP

## ASSIGNMENT OF CONTRACTOR'S RESPONSIBLE PERSONS

<b>ANNEXURE B</b>
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The Principal Contractor shall make the following appointments according to the initial risk assessment or as deemed necessary : (further appointments could become necessary as the project progresses)

<b>Appointment</b>	<b>OHS Act Reference</b>	<b>Requirement abbreviated</b>
CEO Assignee	Section 16(2)	A "Competent Person" to assist with the on-site H&S, overall responsibility – Contractor's Responsible Person
Construction Work Supervisor	CR 6.1	A "Competent Person(s)" to supervise and be responsible of Safety , Health and Environmental related issues on site. The person is appointed to assist the "Competent Person" with his/her overall duties.
Subordinate Construction Work Supervisors	CR 6.2	A "Competent Person" to assist with daily supervision of construction work. The person assists the Construction Work Supervisor.
Safety , Health and Environmental Representative	Section 17	A "Competent Person(s)" to inspect for Health and Safety in reference to plant, machinery , Health & Safety of persons in the workplace and Environmental Management.
Safety , Health and Environmental Committee Member(s)	Section 19	A "Competent Person(s)" representing the employer to assist with the on site Safety ,Health and Environmental matters.
Incident /Accident Investigator	GAR 9.2	A "Competent Person(s)" to investigate incidents/accidents on site and could be: <ul style="list-style-type: none"> <li>• The employer</li> <li>• SHE Representative</li> <li>• Designated person</li> <li>• Member/s of the SHE Committee</li> </ul>
Risk Assessment Co-ordinator	CR 7	A "Competent Person(s)" to co-ordinate all risk assessments on behalf of the Principal Contractor. The same applies to Sub-Contractors.
Fall Protection Plan Co-ordinator	CR 8	A "Competent Person(s)" to prepare & amend the fall protection plan.
First Aiders	GSR 3	A qualified person(s) to address all on site first aid cases.
Lifting Machine & Equipment inspector	DMR 18	A "Competent Person(s)" to inspect lifting machines, equipment & tackle.

Scaffolding Erector	CR 14.1	A "Competent Person(s)" to erect scaffolding
Scaffolding Inspector	CR 14.2	A "Competent Person(s)" to inspect scaffolding before use and every time after bad weather etc
Formwork & Support Work Inspector	CR 10	A "Competent Person(s)" to inspect formwork & support work
Excavation Inspector	CR 11	A "Competent Person(s)" to inspect excavation work and ensure that approved safe working procedures, are followed at all times
Ladder Inspector	GSR 13A	A "Competent Person(s)" to inspect monthly and ensure they are safe for use, keeping monthly record
Stacking Supervisor	CR 26	A "Competent Person(s)" to supervise all stacking and storage operations
Explosive Powered Tools Inspector/Supervisor	CR 19	A "Competent Person(s)" to inspect & clean the tool daily and controlling all operations thereof.
Temporary Electrical Installations Supervisor	CR 22	A "Competent Person(s)" to control all temporary electrical installations.
Fire-Fighting Equipment Inspector	CR 27	A "Competent Person(s)" to inspect fire-fighting equipment

## OTHER REQUIREMENTS

### ANNEXURE C

The Principal Contractor shall comply with the following minimum requirements and report on these to the Client at progress meetings or at least monthly which ever is more frequent.

<b>What</b>	<b>When</b>	<b>Output</b>	<b>Accepted by Client &amp; date</b>
Induction training	Every worker before he/she starts work.	Attendance registers	
Awareness Training (Tool Box Talks)	At least weekly	Attendance registers	
Safety, Health and Environmental Reports	Monthly	Reports covering: <ul style="list-style-type: none"> <li>• Incidents/accidents and investigations</li> <li>• Non conformance by employees</li> <li>• External Health and Safety audit reports</li> </ul>	
Emergency procedures	Ongoing evaluation of procedures	Table procedures in writing as well as tel. numbers	
Risk assessment	Continuous	Documented risk assessment	
Safe work procedures	Drawn up before workers are exposed to new risks	Documented set of safe work procedures (method statements) updated and signed off.	
General Inspections	Weekly & daily	Report OHS Act & Con Regs compliance: <ul style="list-style-type: none"> <li>• Scaffolding</li> <li>• Excavations</li> <li>• Formwork &amp; support work</li> <li>• Explosive tools</li> </ul>	
List of sub-contractors	List to be updated weekly	Table list, number of workers and contract tel. numbers	

Compensation Commissioner	Ongoing	Table a list of Sub-Contractors' proof of good standing with the COID Commissioner	
Construction site rules & Section 37.2 Mandatory Agreements	Ongoing	Table a report of all signed up Mandatories	



## ANNEXURE D

### GENERIC HAZARD IDENTIFICATION AND RISK ANALYSIS

#### TASK ORIENTATED RISKS

<b>RATING</b>	<b>TASK/SITUATION</b>	<b>PERSONAL PROTECTIVE EQUIPMENT</b>	<b>RISK TO SAFETY</b>	<b>PREVENTATIVE ACTION</b>	<b>RISK TO HEALTH</b>	<b>RISK TO ENVIRONMENT</b>
Low	Stripping Topsoil	Hard hats, safety shoes, goggles, ear muffs, overalls	Vehicles reversing over equipment and employees. Dirt in eyes and face	Reverse hooters on trucks. Traffic controller. Protective equipment to be more visible. Protective equipment should be used	Noise induced hearing loss from heavy machinery	Uncontrolled dust. Oil leaks from heavy machinery. Stripping of protected flora
Low	Tipping	Hard hats, safety shoes, goggles, overalls	Trucks reversing over equipment and employees. Trucks toppling over while tipping	Reverse hooters on trucks. Protective clothing to be more visible. Traffic controller to indicate uneven ground to driver		Uncontrolled dust, Oil leaks from heavy machinery
Low	Processing and Compacting	Hard hats, safety shoes, goggles, ear muffs, overalls	Machines reversing. Congestion of machines and personnel. Noise	Reverse hooters on trucks/machines. Limit number of machines in area. Operators to use ear muffs	Noise induced hearing loss	Uncontrolled dust Oil leaks from heavy machinery

<b>RATING</b>	<b>TASK/SITUATION</b>	<b>PERSONAL PROTECTIVE EQUIPMENT</b>	<b>RISK TO SAFETY</b>	<b>PREVENTATIVE ACTION</b>	<b>RISK TO HEALTH</b>	<b>RISK TO ENVIRONMENT</b>
Low	Excavate and load	Hard hats, safety shoes, overalls	Tip trucks reversing over personnel, Trucks colliding with excavators Collisions with other vehicles	Reverse hooters on trucks. Traffic controller. Clerk to check load levels. Brake testing before work daily		
High	Excavations	Overalls, hard hats, safety shoes	Mechanical malfunction. Machine topples over. Machine collisions. Underground services	Training in pre-use checks, inspections Training in outriggers fully extended. Training in awareness of other machines. Pre-excavation checks with engineer	Gases from burst pipes, etc	Cutting down of protected trees, etc. Check with Dept of Environmental Affairs
High	Excavation by Hand	Overalls, hard hats, safety shoes	Heat related illness. Cuts and lacerations. Collapse of excavation Under ground services	Training in increased fluid intake. Training in PPE usage. Training in inspection	Complications resulting from repetitive work	
Medium	Backfilling	Overalls, hard hats, safety shoes	Live burials of personnel	Check all areas before backfilling		
Low	Reinforcing General	Overalls, hard hats, safety shoes, aprons	Injuries, cuts and bruises	Mark all protruding bars with bright coloured marking tape		

<b>RATING</b>	<b>TASK/SITUATION</b>	<b>PERSONAL PROTECTIVE EQUIPMENT</b>	<b>RISK TO SAFETY</b>	<b>PREVENTATIVE ACTION</b>	<b>RISK TO HEALTH</b>	<b>RISK TO ENVIRONMENT</b>
Low	Concrete Work (foundations)	Overalls, hard hats, safety shoes, aprons, goggles	Caving in of unshored sides. Personnel and equipment falling in	Barrier creams must be made available to personnel	Chemical reaction in wet cement causes Dermatitis	Spillages into water
Low	Staircases and Decks	Overalls, hard hats, safety shoes, aprons, goggles	Personnel and equipment falling in	Barrier creams should be made available to personnel	Chemical reaction in wet cement causes Dermatitis	Spillages into ground water
High	Formwork	Overalls, hard hats, safety shoes, aprons	Falls, injuries, fractures, death	Training in safety harness usage		
High	Stripping of Formwork	Overalls, hard hats, safety shoes,	Falling shutter boards. Timber on the ground. Falls from stripping edgework	Training in housekeeping principles. Training in use of safety harnesses	Dermatitis from coming into contact with degreasers	Spillage of oils and degreasers into ground water, etc
Medium	Brick Work General	Overalls, hard hats, safety shoes, gloves	Twisting and straining of back muscles while lifting blocks	Training in manual handling. Use of lifting equipment		
High	Gables	Overalls, hard hats, safety shoes, gloves	Gables collapsing on windy days. Fractures, death	Suspend all work on gables on windy days and clear all personnel		
Medium	Plastering	Overalls, hard hats, safety shoes, gloves		Barrier creams	Chemical reaction in wet cement causes Dermatitis	

<b>RATING</b>	<b>TASK/SITUATION</b>	<b>PERSONAL PROTECTIVE EQUIPMENT</b>	<b>RISK TO SAFETY</b>	<b>PREVENTATIVE ACTION</b>	<b>RISK TO HEALTH</b>	<b>RISK TO ENVIRONMENT</b>
Medium	Cement and Concrete Mixing	Overalls, hard hats, safety shoes, gloves, ear muffs		Training in use of correct PPE. Barrier creams	Ingestion, inhalation of cement. Contact with skin may cause Dermatitis	
High	Roof Trusses	Overalls, hard hats, safety shoes, gloves, harnesses and lifelines	Falls from roof height. Materials falling from heights	Training in fall arrest equipment. Lower unneeded material from roof		
High	Roof Sheeting at Heights	Overalls, hard hats, safety shoes, gloves, harnesses and lifelines	Falling off. Wet weather work. Windy conditions. Angle grinder use. Cuts/laceration. Objects falling. Electrical shocks	Training in safety harnesses and lifelines. Training to get off roof. Pre-use inspection, guard in place. Training barricade areas below.		
High	Scaffolding Erection and Dismantling	Overalls, hard hats, safety shoes, gloves, harnesses and lifelines	Falls-death, fractures. Falling objects. Collapsing of scaffold	Training of qualified erectors only. Training of Personnel. Secure footing, tie scaffolding, scaffold material in good order		
High	Decks, Staircases, etc	Overalls, hard hats, safety shoes, gloves, harnesses and lifelines	Falls from heights. Materials falling from height	Training in safety harnesses and lifelines usage. Barricade all sides adequately		

<b>RATING</b>	<b>TASK/SITUATION</b>	<b>PERSONAL PROTECTIVE EQUIPMENT</b>	<b>RISK TO SAFETY</b>	<b>PREVENTATIVE ACTION</b>	<b>RISK TO HEALTH</b>	<b>RISK TO ENVIRONMENT</b>
High	Ladder Usage	Hard hats, safety shoes	Falls	Training in pre-use checks, monthly inspections, correct length for task, secure at top and bottom, skid pads on feet of ladder, use both hands to climb		
High	Falls (on the ground)	Hard hats, safety shoes	Injuries and bruises	Training in good house keeping		
High	Electrical Installations (Temporary)	Overalls, hard hats, safety shoes, gloves, etc	Exposed switches and wires. Cables lying in pools of water. Un-insulated cables and wires	Tidy up all wires and cover. Suspend all cables above ground. Regular inspections and maintenance		
Medium	Load & Unload by Hand	Gloves	Back and hand injuries	Training, clear task communication		
Medium	Electric Drill	Overalls, hard hats, safety shoes, goggles	Eye injuries, general injuries, electrical shocks	Only competent user, pre use check, monthly inspections, work piece secure. Training of personnel.		

<b>RATING</b>	<b>TASK/SITUATION</b>	<b>PERSONAL PROTECTIVE EQUIPMENT</b>	<b>RISK TO SAFETY</b>	<b>PREVENTATIVE ACTION</b>	<b>RISK TO HEALTH</b>	<b>RISK TO ENVIRONMENT</b>
High	Angle Grinder	Overalls, hard hats, safety shoes, goggles	Electrical shocks, severe injuries	Only competent user, pre-use check, monthly inspections, work piece secure. Training of personnel.		
Medium	Skill Saw	Overalls, hard hats, safety shoes, goggles	Electrical shocks severe injuries, guard malfunction	Only competent user, pre-use check, monthly inspections, work piece secure. Training of personnel.		
Medium	Extension leads	Overalls, hard hats, safety shoes, goggles	Electrical shocks, trips and falls	Training in pre-use inspection, maintenance		
High	Hand Tools	Overalls, hard hats, safety shoes, goggles, aprons	Cuts, bruises	Training in using correct tool for the task, sharpen tools, inspection		
High	Compressed Air Tools	Overalls, hard hats, safety shoes, goggles	Injuries, ruptured eardrums, eye injuries	Training in pre-use inspections		

<b>RATING</b>	<b>TASK/SITUATION</b>	<b>PERSONAL PROTECTIVE EQUIPMENT</b>	<b>RISK TO SAFETY</b>	<b>PREVENTATIVE ACTION</b>	<b>RISK TO HEALTH</b>	<b>RISK TO ENVIRONMENT</b>
High	Driving Vehicles		Accidents Passengers Un-roadworthy Vehicles Driver Road and weather conditions Other road users	Licensed drivers only, obey rules. Seated not leaning on opening sides. Inspections of vehicle Fit to drive, sober. Reduce speed, be alert Be aware, be alert		
Medium	Noise (General Machinery)	Ear plugs, ear muffs		Training of personnel. Designate noise areas	Noise induced hearing loss	Noise pollution
Medium	Vibration (General Machinery)	Ear plugs, ear muffs, gloves		Training of personnel rest breaks	May result in kidney complications	
Medium	Hot & Humid Work Area			Adequate drinking water. Training to identify symptoms. Vitamin and mineral supplements	Heat exhaustion and heat stroke	
High	Radiation	Overall, hard hats, safety shoes, gloves, body suits, goggles		Training of Personnel. Use of prescribed PPE	Exposure may lead to cancers and other complications	

<b>RATING</b>	<b>TASK/SITUATION</b>	<b>PERSONAL PROTECTIVE EQUIPMENT</b>	<b>RISK TO SAFETY</b>	<b>PREVENTATIVE ACTION</b>	<b>RISK TO HEALTH</b>	<b>RISK TO ENVIRONMENT</b>
Medium	Bad lighting whilst working		Injuries, falls, death	Adequate lighting. Emergency lighting		
High	Fire Prevention (Hot Work )	Overalls, hard hats, safety shoes, aprons, spats, gloves	Combustible refuse: Paper & plastics Flammable liquids: Petrol, diesel, etc. Electrical equipment	Training of personnel, housekeeping, segregated storage of materials		
Medium	Awkward Postures		Back injuries, etc.	Sufficient access to areas	Health complications from unnatural postures	
High	Heavy Manual handling		Back injuries, etc.	Training in Safe work procedure in lifting equipment		
Low	Working in the Direct Path of Energy Release (Line of Fire)	Overalls, hard hats, safety shoes, gloves, body suits, goggles	Multiple injuries death	Permit system. Lockout procedure. Identify source and communication	Multiple health complications	



<b>RATING</b>	<b>TASK/SITUATION</b>	<b>PERSONAL PROTECTIVE EQUIPMENT</b>	<b>RISK TO SAFETY</b>	<b>PREVENTATIVE ACTION</b>	<b>RISK TO HEALTH</b>	<b>RISK TO ENVIRONMENT</b>
Medium	Man/machine Interaction	Overalls, hard hats, safety shoes, gloves, body suits, goggles	Loose clothing caught in machines. Limbs trapped or severed	Operational boundaries. Training of personnel. Warning mechanisms. Clear communication between operators		
Medium	Climbing Up and Down and On and Off – Structures, etc.	Overalls, hard hats, safety shoes, gloves, body suits, goggles	Trips, falls, fractures, etc	Training of personnel. Adequate and correct access. No jumping between platforms		
Low	Focusing Eyes on Activity	Overalls, hard hats, safety shoes, gloves, body suits, goggles	Trips, falls, fractures, etc	Training of personnel. Looking while walking. Looking at the task at hand.		
Low	Using Right Tool for the Job	Overalls, hard hats, safety shoes, gloves, body suits, goggles	Injuries, cuts, bruises, fractures, etc	Training of personnel. Get rid of homemade tools. Correct tools inspections. Serviceable equipment		