RUSTENURG LOCAL MUNICIPALITY

CONTRACT NO: RLM/OMM/0113/2024/25

RE-ADVERT: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF SERALENG SPORTS FACILITY

DATE

NAME OF BIDDER: ……..

BID PRICE: …… (VAT Incl)

Prepared by:

RUSTENBURG
LOCAL MUNICIPALITY
CNR BEYERS NAUDE AND MANDELA DRIVE
RUSTENBURG
014 590 3111

BID CLOSES: **DATE :**

PARTICULARS OF THE BIDDER	
NAME OF THE BIDDING OR TENDERING COMPANY	

Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

POSTAL ADDRESS		
	POSTAL CODE	
STREET ADDRESS (PHYICAL ADDRESS)		
	POSTAL CODE	
E-MAIL ADDRESS		
TELEPHONE NUMBER (TELKOM LINE)		
CIDB CRS NUMBER (IF APPLICABLE)		
CELLPHONE NUMBER		
ALTERNATE CELLPHONE NO.		
CENTRAL SUPPLIER DATABASE NUMBER OF THE BIDDING COMPANY		
CRS NUMBER		
BID INFORMATION (TIME AND DATE OF CLOSER)	DATE: TIME:	
BID PRICE (VAT INCLUSIVE)		

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BID PROCESS CRITERIA LIST

RLM/OMM/0113/2024/25 - RE-ADVERT: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF SERALENG SPORTS FACILITY

Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

TENDERING PROCEDURES:

DOCUMENT COMPLETION INSTRUCTION AND RETURNABLE DOCUMENTS SCHEDULE

A bid not complying with the requirements stated hereunder will be regarded as an "Unacceptable bid", and as such will be rejected.

"Unacceptable bid" means any bid which, in all respects, does not comply with the conditions of bid and specifications as set out in the bid documents, including conditions as specified in the Preferential Procurement Policy Framework Act (Act 5 of 2000) and related legislation as published in Government Gazette number 22549, dated 10 August 2001, in terms of which provision is made for this policy.

Important information to note:

1. Bidder should not remove any page from the bid document or submit a copy of the original bid document.

Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

2. The bid document should not be completed using a pencil or any other colour ink. Only black ink must be used to complete the bid document. Only tick the appropriate option. Please be informed that whether you scratch out, tick or circle, your answer will be where the pen ink is reflecting.
3. The bid should be properly signed by the designated signatory contained in the tender document.
4. The bidder should not attempt to influence the evaluation and/or awarding of the contract.
5. The bid should not submit after the relevant closing date and time.
6. Failure to complete and sign and / or disclose wrong information in any of the declaration forms.
7. Compulsory questionnaires must be fully completed and signed.
   NB! In the case of Joint Venture separate compulsory questionnaire forms must be completed and submitted.
8. The bidder must in the case of Joint Venture submit separate MBD 5 forms for each partner.
9. In the case of multi directors or joint venture, the bidder must submit separate MBD 4 declaration forms for each director.
10. Bid documents must be in envelopes that clearly marked with the bid number and description.
11. Bidders who use correction pens. In a case where a wrong answer is ticked, a straight line must be made across the wrong answer, then initial next to the mistake and a correct answer must be ticked or provided in writing.
12. Bidder must be registered with Central Supplier Database (CSD)
13. The bidder must attach the following documents:

- A valid proof of payment with the relevant reference number as stipulated in the tender advertisement.
- Required CIDB Grading Certificate where applicable.
- The authority of signatory (printed on bidder's letter head) if the tender is a CIDB related project.
- A copy of a valid signed Joint Venture/Consortium agreement (if applicable) to the bid document.
- **<u>Municipal rates and taxes statements of the directors</u>**
  - ✓ Current municipal rates and taxes statement in the names of the director (from the previous month determined by the date of tender closure) for each directors' address must be attached; or
  - ✓ Valid lease agreement of the director/s with all critical contractual obligations (i.e Lease period, use of premises, lessors' responsibilities, leases' possibilities, amounts related to the lease, address of the leased premises, signatures etc) or,
  - ✓ An original letter from tribal authority not older than three (3) months if the director/s are residing in a tribal land, or
  - ✓ If the rates and taxes account is not in the names of the director/s the attached municipal rates and taxes statement must be submitted together with an original affidavit from the property

Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

owner whose names are appearing on the municipal rates and taxes statement to confirm that the director resides in their property.

- **Municipal rates and taxes statements of the company**

  - ✓ Current municipal rates and taxes statement in the name of the company (from the previous month determined by the date of tender closure) for the company's' address must be attached; or
  - ✓ Valid lease agreement of the company (showing all critical contractual obligations (i.e Lease period, use of premises, lessors' responsibilities, leases' possibilities, amounts related to the lease, address of the leased premises, signatures etc), or
  - ✓ An original letter from a tribal authority not older than three (3) months if the company is operating from a tribal, or
  - ✓ If the rates and taxes account is not in the names of the company, the attached municipal rates taxes statement must be submitted together with an original affidavit from the property owner whose names are reflecting on the municipal rates and taxes statement to confirm that the company operates from their property.

NB!!

The company address written on the tender document and statement submitted must be the same as the one reflected on the CSD report.

- ✓ **For procurement expected to be less than 10 million, awards will not be made to bidders owing municipal rates and taxes for over 90 days at the time of tender closure.**
- ✓ **For procurement expected to be more than 10 million, awards will not be made to bidders owing municipal rates and taxes for over 30 days at the time of tender closure.**

14. The bidder must comply with the following:
    - Bidders must submit both a hard copy document and an electronic tender document in the form of a USB (only) which must be clearly marked with the company name. (Bidders will be disqualified for not submitting a USB containing the scanned bidding documentation)

VERIFICATION OF DOCUMENTS AND INFORMATION.

- Please note that by submitting this tender document, you are agreeing to the verification process of your supporting documents by the Rustenburg Local Municipality.
- Tax compliance status will be verified using CSD number. (For a bidder to be considered for final award, their status must reflect "tax compliance" before final award is made)
- CIDB Grading will be verified.
- Sworn Affidavits will be accepted only if its originals submitted.

Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

BID NOTICE

RLM/OMM/0113/2024/25 - RE-ADVERT: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF SERALENG SPORTS FACILITY

Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

TENDER ADVERTISEMENT

BID NO.	DESCRIPTION	DOC. FEES (NON-REFUNDABLE)	EVALUATION CRITERION	ENQUIRIES	COMPULSORY BRIEFING SESSION	CLOSING DATE
RLM/OMM/0113/2024/25	Re-advert: Appointment of a contractor for the construction of Seraleng sports facility	**TENDER DOCUMENT AMOUNT** R 7 500.00 **REFERENCE NUMBER:** 0113+Company name **BANK NAME** Standard Bank **ACCOUNT NUMBER:** 033 054 657	❖ Administrative evaluation (document completion and attachment of all mandatory documents as listed in the tender document) to include all necessary certifications. ❖ CIDB Grading of 6CE or higher ❖ Functionality minimum qualifying score of 70 out of a maximum of 100 points ❖ 80/20 preferential point system (price = 80 & Specific goals = 20) NB! That no other evaluation criterion should be used	**TECHNICAL** Mr. A. Ngapo 014 590 3607 lmokoka@rustenburg.gov.za **SCM** Ms. J. Masinga 014 590 3123 jmasinga@rustenburg.gov.za	**N/A**	**Date:** 04 Aug 2025 **Time:** 09:00

1. Bid documents must be in a sealed packaging clearly marked with the bid number and description, must be placed in the bid box in the foyer of the Municipal offices, Missionary Mpheni House, Beyers Naude Drive, Rustenburg not later than the prescribed closing date, where after the bids will be opened in public at the Municipal offices.
2. All bids will be evaluated in accordance with the Supply Chain Policy of the Rustenburg Local Municipality, PPPFA 2022 and other related legislations. Bids will remain valid for 90 days.
3. The lowest or any bid will not be necessarily accepted, and the municipality reserves the right to accept the whole or part of any bid. The municipality reserves the right to increase or decrease quantities as indicated in the technical specifications. A market analysis conducted will be taken into consideration to ensure right procurement and quality service delivery.
4. Tender submission must comply with the instruction note (Tender Completion and Attachment of Mandatory Documents) as well as all other additional tendering condition and requirements stated in the tender document.
5. Objections or complaints must be submitted in writing to the Municipal Manager at the address stated, and must contain the following:
   (a) reasons and/or grounds for the objection or complaint.
   (b) the way in which the objector or complainant's rights have been affected; and
   (c) the remedy sought by the objector or complainant
6. Any objection or complaint must reach the Municipal Manager with a 14-day period after award has been made. Late objections or complaints will not be entertained.
7. Submissions which fail to adhere to all the requirements and instructions stated on this advert, E-tender advert, CIDB Website for CIDB tenders as well as the tender document will lead to disqualification.
8. Should there be any contradictions between the information on the advert and the information in the tender document, then the information on this advert will take precedence.

TERMS OF REFERENCE
(SPECIFICATIONS)

RLM/OMM/0113/2024/25 - RE-ADVERT: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF SERALENG SPORTS FACILITY

C3: Scope of Work

1. DESCRIPTION OF THE WORKS

1.1 Employer's objectives

The Employer's objective is to appoint a suitably qualified and experienced contractor for the construction of a Sport Facility in Seraleng (Ward 43) on behalf of Rustenburg Local Municipality. The facility will be constructed to the outlines as mentioned in Department of Sports, Arts and Recreation manual "Norms and Standards for Sports and Recreation Infrastructure Provision and Management- VOL 2 Technical Specifications of 2010

1.2 Overview of the works

The project scope comprises of the following:

NOTE TO TENDERERS: The above description of the Works is not necessarily exhaustive and shall not limit the work to be carried out by the Contractor under this Contract. All works are envisaged to be constructed by labour-based techniques wherever practicable but conventional methods may be employed whenever necessary.

The CIDB requirement on this project is 6CE or higher and the duration is estimated to be 8 months.

Detailed Description of the Works

i. Construction of full size artificial turf soccer pitch

ii. Construction of 2 Combi Courts

iii. Construction of Pavilion with ablution facilities and 2x operations offices

iv. Construction of guard house

v. Waste management facility

vi. Construction of approximately 500m of clear fence

vii. Civil Works (Earthworks, sewer and water pipe installations and connection)

viii. Construction of elevated water tank with 10 000 litre storage

ix. Electrification of facility

x. High mast lighting

1.3 Location of the works

The project area consists of Seraleng, which forms part of Rustenburg Local Municipality (RLM) under jurisdiction of the Bojanala District Municipality. It is l 3km south of Rustenburg CBD and is accessible by tar roads. Its GPS coordinates are:

Latitude: 25° 37' 12,09" S

Longitude: 27° 14' 20,36" E.

The site shall not only include the works area for the construction of the new services but shall be extended in the broader sense to take account of all areas occupied by the Contractor, be it deliberate or unintentional, in the execution of the contract. The location of the site camp and site access to be proposed by the successful tenderer and agreed by the Client and Engineer/Agent.

The limits of the project are as shown on the locality plan bound into the book of drawings to be received together with this document. Choosing a location for the site camp shall be the responsibility of the successful tenderer assisted by the municipality.

1.4 Delivery of materials and equipment

It is the responsibility of the Contractor to take delivery, off-load, store and move into their permanent position all equipment and materials covered under this contract. The Contractor shall, at its own expense, be responsible for the delivery to the Site of imported plant and equipment, materials and Contractor's plant and equipment in connection with the execution of the works, including but not limited to securing of permits and customs clearances, and payment of handling costs, storage costs, releasing costs, transportation costs, and duties, taxes, imposts, excise and charges of any kind that may be imposed by the South African Government, or any of its agencies and political subdivisions relating to the supply and delivery to the Site of the imported plant and equipment, materials and Contractor's plant and equipment.

2. Temporary Works

The Contractor shall, as relevant:

1. Clear site and surroundings to create accessible working areas as required
2. Provide temporary drainage works, temporary pumps and other equipment as may be necessary for the protection, draining and dewatering of the works.
3. Construct and maintain haulage, temporary access and construction roads with their required storm water systems, subject to the approval of the Employer, and permit the Employer, other Contractors, statutory bodies or any other person who might require legitimate access to or through the site for the purpose of executing legitimate business, free and unhindered usage of such roads. Where suitable, the primary haulage roads will be graded and re- gravelled where necessary towards the end of the contract to form a future maintenance road.
4. Temporary water connections, Contractor's offices, storage sheds, latrines, barricading of Works shall be in an approved position and subject to the approval of all authorities concerned.
5. Safety and security of the Contractors' temporary works shall be at the Contractors' discretion, but always in accordance with stipulated Occupational Health and Safety requirements.
6. The camp shall be adequately guarded during and outside working hours
7. The temporary works include:
    - The works required to locate, verify and protect existing services within the works area.

    The works must:

    - Be such to ensure no or limited interruption to the operation of the existing water supply to Tlhabane township and must further ensure limited interruption to vehicular and pedestrian traffic; and
    - Be such that existing water and sanitation infrastructure shall not be impeded during survey and construction activities.
8. Protection of excavations

    Further, the Contractor shall note that no stockpiling of materials, plant, excavated material or any other construction related infrastructure shall be allowed in locations that may interfere with the operations of the Employer and the public in general.

3. Procurement

3.1 Preferential procurement procedures

The works shall be executed in accordance with the conditions pertaining to preferences granted in accordance with the preferencing schedule.

3.2 Labour and Personnel

3.2.1 Contractors Personnel

The Contractor shall limit the utilisation of his permanently employed personnel to that of key personnel only on the Works, as defined below, and shall execute and complete the Works utilising a temporary workforce employed directly by the Contractor and/or by his sub-contractors, using the assistance of the Labour Desk(s), from the various communities that are established in proximity to the Works or which will be consumers from the Scheme.

Without derogating from the Contractor's obligations to complete the Works within the specified time for completion, the numbers in each category of the Contractor's key personnel, as stated by the Contractor in the Returnable Schedules, will be strictly controlled during the contract period and any increase in numbers will be subject to the prior approval of the Employer.

Key personnel means all contracts managers, site agents, site clerks, materials and survey technicians, quantity surveyors, trainers, supervisors, foremen, skilled plant operators, brick layers, welders, shutter hands and the like, and all other personnel in the permanent employ of the Contractor or his sub-contractors who possess special skills, and/or who play key roles within the Contractor's or his subcontractor's operations.

The Engineer may at his discretion, upon receipt of a written and fully motivated application from the Contractor, and where he deems the circumstances so warrant, authorise in writing that the Contractor may utilise in the execution of the Works, workers not being his key personnel but who are in his permanent employ. Without limiting the generality of application of this sub-clause, circumstances which may be considered by the Engineer to warrant authorization of the use of the Contractor's permanent employees other than key personnel, include:

a) The unavailability from local sources of sufficient numbers of temporary workers and/or sub-contractors to execute the Works provided always that the Contractor has satisfied the Engineer that he has exercised his best endeavours and taken all reasonable actions to recruit sufficient temporary workers and sub-contractors from local sources.

b) The unavailability within the temporary worker pool and/or from subcontractor sources available to the Contractor in terms of the Contract, of sufficient skills necessary to execute the Works or specific portions thereof, in situations where the completion period allowed in the Contract is insufficient to facilitate the creation of the necessary skills through the provision of suitable training as contemplated in the Contract;

c) Any other circumstances which the Engineer may deem as constituting a warrant.

3.2.2 Temporary Workforce

The Contractor shall employ labour from the local communities through the Labour Desk(s). Accordingly, the workforce that is employed on Site shall consist of local residents, except for approved key staff in the permanent employ of the Contractor, to the maximum extent that is compatible with the requirements of clause C3.2.1.

The Labour Desk(s) shall assist in identifying available local labour and, where available, semi-skilled labour as well as local sub-contractors. The Labour Desks shall also assist and advise regarding conditions of employment, disputes and disciplinary procedures. The function of the Labour Desk(s) shall however in no way diminish the responsibilities of the Contractor or sub-contractor.

The Contractor and its sub-contractor shall adhere to the statutory minimum wage rates, they are however at liberty to negotiate additional incentive payments based on performance.

A contract of employment or subcontract should be signed between the Contractor and each of his employees or sub-contractors, as the case may be. Likewise contracts of employment must be entered into between each such sub-contractor, and each of the specific subcontractor's employees. Employment and subcontract agreements shall make clear reference to at least the following conditions:

- The minimum agreed wage rate per hour in respect of labourers;
- The agreed pay rate per unit of production where applicable;
- UIF and WCA payments;
- Minimum working hours per day;
- Start and end times of a daily shift;
- Lunch break times;
- Company Policy regarding :

  Rain time
  Sickness and absenteeism
  Disciplinary matters
  Grievances

- Method and frequency of payment;
- Work clothes and safety equipment to be issued.

3.2.3 Local Content and Labour-Intensive Construction

The promotion of the use of local content is required in the execution of this project. This will be achieved by the use of local labour and local sub-contractors in the construction of works equivalent to twenty-five percent (25%) of the total cost of works are to be constructed. The following limits apply:

- Construction by subcontractors may constitute a maximum of 25% of the total local content works.
- Construction using labour intensive construction methods and employing locally (within Tlhabane and its surrounds) labour must make up 75% the total local content works.

Labour Intensive Construction shall mean the economically efficient employment of as great a portion of labour as is technically feasible to produce a standard of construction as demanded by the Specifications with completion by the Due Completion Date, thus the effective substitution of labour for equipment.

Appropriate portions of the Works included in the Contract shall be executed using labour intensive construction methods. These portions of the Works shall be constructed and supplemented only to the extent necessary and unavoidable by the Contractors key personnel, unless otherwise instructed by the Engineer.

The portions of the Works to be executed using labour intensive construction methods are:

- Clearing and grubbing of the Site;
- Hand excavation in restricted areas
- Trimming of trenches
- Laying of bedding material and placing of pipes
- Steel fixing and reinforcing placement.
- Casting of concrete to structures and finishing of surfaces
- Bricklaying and plastering
- Tiling and painting
- Dismantling and re-erection of fences; and
- Cleaning and tidying up of the Site.

In respect of those portions of works which are not listed above, the construction methods adopted and plant utilised shall be at the discretion of the Contractor, provided always that the construction methods adopted and plant utilised by the Contractor are appropriate in respect of the nature of the Works to be executed and the standards to be achieved in terms of the Contract.

3.2.4 Subcontracting

3.2.4.1 The Contractor shall sub-let to sub-contractors' appropriate portions of the works. A sub-contract agreement shall be signed between the contractor and each of its sub-contractors.

3.2.4.2 The Contractor shall be responsible for all work carried out by sub-contractors on his behalf. The Engineer will not liaise directly with any such sub-contractor, nor will he become involved in any problems and/or disputes related to payments, programming, workmanship, etc, unless provided for in the Conditions of Contract. Such problems and/or disputes shall remain the sole concern of the Contractor and his sub-contractors.

3.2.4.3 The Engineer may at his discretion, upon receipt of a written and fully motivated application from the Contractor, and where he deems the circumstances so warrant, and provided always that the Contractor has complied fully and in all respects with the provisions of the Contract pertaining to subletting to local sub-contractors or has utilised his best endeavours to comply therewith, authorise in writing that the Contractor may employ local residents with the sole intent of executing on-the-job training of such local residents to suitable levels of skill.

Without limiting the generality of application of this clause, circumstances which may be considered by the Engineer to warrant such authorization include:

a) non-receipt of valid or acceptable tenders/quotations from local sub-contractors;
b) serious default or failure of appointed local sub-contractors;

The Engineer shall not grant such authority in cases where it may reasonably be concluded on the available evidence that the invitation of further tenders/quotations in accordance with the terms of the Contract is likely to result in the successful completion of the portions of the Works concerned by sub-contractors.

Should the Contractor, after suitable due endeavour, be unable to identify sub-contractors for portions of the Works as specified, then the Contractor shall be permitted to undertake the Works in question with his own workforce as provided for above.
The Engineer shall monitor progress achieved with subcontractor training, and successful completion of this training shall be subject to his approval or instruction. The Contractor shall tender rates for the training of sub-contractors and labour.

3.2.4.4 The Contractor shall approach the Labour Desk that is established for purposes of the Contract for assistance and advice regarding conditions of employment, minimum wages, disputes and disciplinary procedures in respect of local sub-contractors.

3.2.5 Sub-contractor

To qualify as a sub-contractor the following requirements shall be applicable:

- Registration with the CIDB in the min class of CE registration applicable for a particular amount of

work

- Submit an original valid Tax Clearance Certificate (in terms of the Preferential Procurement

Regulations, 2011 published in Government Gazette No. 34350 dated 8 June 2011),

- Submit a valid VAT Registration Certificate (if VAT number is not included in tax clearance certificate),
- Submit a valid Workmen's Compensation Certificate, Act 4 of 2002,
- Submit a valid Unemployment Insurance Certificate, Act 4 of 2002,
- Submit a Certificate of Incorporation (if a Company),
- Submit a Founding Statement (if a Closed Corporation),
- Submit a Partnership Agreement (if a Partnership),
- Submit an Identity Document (if a One-man concern),
- Submit a Joint Venture Agreement (if a Joint Venture),
- Submit monthly proof of SARS PAYE in respect of all labourers
- Submit a Curriculum vitae of the person who prepares the Health and Safety Plan,
- Curriculum vitae of the Health and Safety Officer to be appointing in accordance with the Occupational

Health and Safety Act (Act 85 of 1993).

- Provide all work clothes, safety equipment and tools required for the execution of the Works
- The minimum amount of liability insurance cover required will be R 1 000 00.00 per event, the number

of events being unlimited.

- Payment of all amounts due to the local sub-contractor by the Contractor shall be subject to a the

same retention conditions as applicable the Contractor.

- The sub-contractor shall deliver to the Contractor a performance guarantee of an insurance company

or a bank to be jointly and severally bound with the sub-contractor for an amount equal to the same guarantee conditions as applicable to the Contractor

- Submit payments certificates to the Contractor at a frequency of once a month with payment made by

the Contractor within seven days after the Employer paid the Contractor.

- The Contractor and its sub-contractor shall enter into a SAFCEC (or similar) sub-contract agreement.

C3.2 STANDARD SPECIFICATIONS

The Standard specifications on which this contract is based are the standardized specifications for Civil Engineering Construction (SABS 1200) of the South African Bureau of Standard (SABS).

The following SABS 1200 Standard Specifications for Civil Engineering Construction shall form part of this contract and are available at the expense of the Contractor from the SA Bureau of Standards, Private Bag X191 Pretoria, 0001:

Other Standard Specifications

SANS 1921 – 1 (2004): Construction and Management Requirements for Works Contracts Part 1: General Engineering and Construction Works

and where accommodation of traffic is involved:

SANS 1921-2 (2004): Construction and Management Requirements for Works Contracts Part 2: Accommodation of Traffic on Public Roads Occupied by the Contractor.

C3.2.1 Applicable SANS standards

The following SANS specifications are also referred to in this document and the Contractor is advised to obtain them from Standards South Africa (a division of SANS) in Pretoria.

- SANS 1921-1 (2004): Construction and Management Requirements for Works Contracts Part 1: General Engineering and Construction Works
- SANS 1921-6 (2004): Construction and Management Requirements for Works Contracts Part 6: HIV / AIDS Awareness

The standardised specifications (SANS 1200) must be read in conjunction with the new SANS 1921 family of standards. In case of any discrepancy or conflict between the two, the SANS 1200 specification shall take precedence and shall govern.

The term “project specifications” appearing in any of the SANS 1200 standardised specifications is deemed to be equivalent to the term “scope of work” in SANS Specifications.

C3.2.2 Applicable SANS 1921 Standards

The following SANS 1921 Construction and Management requirements for works standards and associated specification data are applicable:

SANS 1921-1 General engineering and construction works
SANS 1921-3 Steelworks
SANS 1921-6 HIV/AIDS awareness

C3.3 PROJECT SPECIFICATIONS

STATUS

Applicable SANS 1200 standards for construction works

The applicable SABS 1200 Standardized Specifications for Civil Engineering Construction for this Contract shall be the following:

SABS 1200 A	:	General
SABS 1200 AB	:	Engineer's Office
SABS 1200 C	:	Site Clearance
SABS 13200 D	:	Earthwork
SABS 1200 DB	:	Earthwork (pipe trenches)
SABS 1200 DA	:	Earthworks (small works)
SABS 1200 G	:	Concrete (Structural)
SABS 1200 GA	:	Concrete (Small Works)
SABS 1200 GB	:	Concrete (Ordinary Building)
SABS 1200 H	:	Structural Steel Works
SABS 1200 L	:	Medium Pressure Pipelines
SABS 1200 LB	:	Bedding (Pipes)
SABS 1200 LD	:	Sewers
SABS 1200 LE	:	Storm Water Drainage
SABS 1200 MJ	:	Segmented Paving
SABS 1200 MK	:	Kerbing and Channelling

Note 1 The Standard Specifications are not bound into the tender and contract documents, but are available at the Tenderer's/Contractor's expense from the South African Bureau of Standards in Pretoria, Private Bag X191, PRETORIA, 0001.

Note 2 Each of the Standard Specifications contains an appendix, which in turn lists further specifications which are not bound into the tender and contract documents.

Note 3 Both of the Standard Specifications, as well as those specifications that are listed in the appendix to the Standard Specifications, shall apply to the Contract to the same extent as if each of these specifications had been bound into the tender/contract documents.

Variations and Additional Clauses to the Standard and Particular Specifications

The following variations and additions to the Standard and Particular Specifications will be applicable to this Contract.

The various documents listed in Section 4.1 shall be treated as mutually explanatory. However, should any requirements of Section 4.1 conflict with any requirement in the Standardized Specifications or with any requirement of the Particular Specifications, then the requirements of Section 4.2 shall prevail.

The Contractor shall make suitable arrangements for process control prior to commencement with the Works. Should he intend using site personnel for this purpose he shall ensure that suitably trained and competent personnel take charge of the necessary test work, and that the necessary equipment is at their disposal prior to commencement of the Works. Failure to comply with these requirements shall be just cause for the Engineer to order suspension of the Works without additional remuneration in terms of Clause 5.11 of the Conditions of Contract (2015), or for him to recommend termination to the

DEFINITIONS

For the purpose of this Contract the following shall have the associated meaning:

1. Unless inconsistent with the context, an expression which denotes:

    a. Any gender includes the other genders;

    b. A natural person includes a juristic person and vice versa; and

    c. The singular includes the plural and vice versa.

2. '*Service Provide*r' shall mean either a consultant or contractor appointed to provide a particular service, i.e. investigations, design, labour provision and/or construction.

3. '*VAT*' shall mean Value Added Tax in terms of the Value Added Tax Act 89 of 1991 as amended.

4. All references to 'Engineer' in the Specifications shall be understood to refer to the 'Employer's Agent' as defined in the Conditions of Contract.

PART A: CIVIL

PART A1 GENERAL DESCRIPTION OF THE CIVIL WORKS, THE SITE AND THE MANAGEMENT REQUIREMENTS

CONSTRUCTION AND MANAGEMENT REQUIREMENTS

General

This section of the Contract documents should be read together with all other sections and Standardized, and Particular Specifications included in the Contract documents or Standardized Specifications mentioned in the Contract documents, but separately available. The documents should be read and interpreted jointly in order to determine the full requirements of the Contract

Certain aspects however require further attention as described hereafter.

Information Required at Tender Stage

It is a specific requirement of the tender that full information of all the equipment offered must be supplied at the time of tendering for the Engineer to evaluate the Tenderer's submission. In this regard, the Tenderer shall complete all technical schedules issued as part of the tender document.

2 Drawings

2.1 Employer's Design

The permanent works included in this contract has been designed by the Employer. The detail of the works is indicated on the drawings and in the specifications. The Tenderer may submit alternative offers for designs prepared by him subject to the conditions specified in the Contract Data.

2.2 Drawings

Drawings are bound into this document.

The reduced drawings form part of the tender documents as mentioned under Part T1 and shall be used for tendering purposes only.

The contractor shall be supplied with two complete paper copies of the construction drawings free of charge. The Contractor shall at his own expense re-produce further paper prints required for the construction of the work.

At the completion of the Contract, the Contractor shall return to the Engineer all drawings, provided or made, during the contract period.

Any information which the Contractor has control over and which is required by the Resident Engineer to complete the as built drawings shall be made available to the Resident Engineer before the Certificate of Completion is issued.

Only written dimensions may be used. Dimensions are not to be scaled from drawings unless ordered by the Engineer. The Engineer will supply all figures / dimensions which are not shown on the drawings. The levels or dimensions given on the drawings are subject to confirmation on site. The Contractor shall submit all levels and dimensions to the Engineer for confirmation before he commences with any structural construction work. The Contractor shall also check all dimensions which are given on the drawings and inform the Engineer of any conflicting dimensions.

For the portions of the Works designed by the Contractor (such as final pipe items and fittings), the latter shall furnish the Engineer with a full set of working drawings showing the exact dimensions and details of equipment to be manufactured. The drawings must be approved by the Engineer before manufacture of the equipment commences. Once satisfied, the Engineer shall approve the drawings in principle, which shall not relieve the Contractor from his responsibility to execute the Works in terms of the Specification, correctness of the drawings and final dimensions of all manufactured items.

Responsibilities for design and construction

The responsibility strategy followed in this contract shall be a design by the Employer.

The engineer responsible for the design in accordance with the specification is: MR Consulting Engineers.

The Contractor undertakes only construction based on designs issued by the Employer. The Contractor is to follow the specification, the design and construction drawings as laid out by the Employer.

Materials, samples

All materials required for incorporation into the permanent works are to be supplied by the Contractor. Where possible, these materials shall be sourced from within the area, considering availability of supply, price and continuity of supply. In-situ material can be used where suitable. Spoiling and spreading of material will not be permitted on site and suitable temporary stockpile areas must be identified by the Contractor and approved by the Engineer prior to stockpiling.

It is the responsibility of the Contractor to take delivery, off-load, store, and move into their permanent position all equipment and materials covered under this contract. The Contractor shall, at its own expense, be responsible for the delivery to the Site of imported plant and equipment, materials and Contractor's plant and equipment in connection with the execution of the works, including but not limited to securing of permits and customs clearances, and payment of handling costs, storage costs, releasing costs, transportation costs, and duties, taxes, imposts, excise and charges of any kind that may be imposed by the South African Government, or any of its agencies and political subdivisions relating to the supply and delivery to the Site of the imported plant and equipment, materials and Contractor's plant and equipment.

Temporary works

"Temporary works" does not include activities or facilities such as the provision of accommodation for the contractor and Engineer, temporary water and power supplies, shuttering, scaffolding and all equipment specified or necessary to complete the works specified and/or shown on the drawings and included for in the Bill of Quantities.

Temporary works shall include the provision of access to the sites of the works and include ramps into excavations for deploying labour and plant at the positions required. No temporary works have been allowed for.

Preliminary programme

The Contractor shall include with his tender a preliminary programme on the prescribed form to be completed by all Tenderers. The programme shall be in the form of a simplified bar chart with sufficient details to show clearly how the works will be performed within the time for completion as stated in the Contract Data.

Tenderers may submit tenders for an alternative Time for Completion in addition to a tender based on the initial tendered Time for Completion. Each such alternative tender shall include a preliminary programme similar to the programme above for the execution of the works and shall motivate his proposal clearly by stating all the financial implications of the alternative completion time.

The Contractor shall be deemed to have allowed fully in his tendered rates and prices as well as in his programme for all possible delays due to normal adverse weather conditions and special non-working days as specified in the Special Conditions of Contract, in the Project Specifications and in the Contract Data.

Time for Completion

The tenderer shall indicate under section C1.2.2: Data provided by Contractor the time within which the contract shall be completed.

Delay in Completion

The Contractor shall organise the Works in such a manner that no delays occur. Delays due to faulty organisation or lack or shortage of materials or labour or co-operation with other parties or to any other cause within the control of the Contractor will not be countenanced and full power is reserved by the Engineer to order the Contractor to expedite the work should the work, in the opinion of the Engineer, not progress in a satisfactory way.

QUALITY ASSURANCE (QA) (READ WITH SANS 1921 – 1: 2004 CLAUSE 4.4)

The Contractor will be solely responsible to produce work that complies with the Specifications to the satisfaction of the Engineer. To this end it will be the full responsibility of the Contractor to institute an appropriate Quality Assurance (QA) system on site. The Engineer will audit the Contractor's quality assurance (QA) system on a regular basis to verify that adequate independent checks and tests are being carried out and to ensure that the Contractor's own control is sufficient to identify any possible quality problems which could cause a delay or failure.

The Contractor shall ensure that efficient supervisory staff, the required transport, instruments, equipment and tools are available to control the quality of his own workmanship in accordance with his QA-system. His attention is drawn to the fact that it is not the duty of the Engineer or the Engineer's representative to act as foreman or surveyor.

MANAGEMENT AND DISPOSAL OF WATER

The Contractor shall pay special attention to the management and disposal of water and storm water on the site. It is essential that all completed works or parts thereof are kept dry and properly drained. Claims for delay and for repair of damage caused to the works because of the Contractor's failure to properly manage rain and surface water, will not be considered.

EARTHWORKS

Process control

The Contractor shall arrange for his own process control tests. The Contractor must submit the results of tests carried out on materials and workmanship when submitting work for acceptance by the Engineer. The costs for these tests shall be deemed to be included in the relevant rates and no additional payment will be made for testing as required.

Acceptance control

The process control test results submitted by the Contractor for approval of materials and workmanship may be used by the Engineer for acceptance control. However, before accepting any work, the Engineer shall have his own acceptance control tests carried out by an approved laboratory. The cost of acceptance testing shall be to the account of the Employer.

SITE ESTABLISHMENT (READ WITH SANS 1921 - 1: 2004 CLAUSE 4.14)

Contractor's camp site and depot

The Contractor is responsible to provide a suitable site for his camp and to provide accommodation for his personnel, labourers, clerk of works and contracts manager. If the Employer can make any specific site available to the Contractor, such site will be pointed out to the Contractor. The construction yard will not be serviced, and the Contractor shall make arrangements to connect all necessary services to specific points.

The Contractor shall provide security watchmen for the contract as he deems fit at no extra cost for the Employer. The Contractor must ensure that all his employees as well as the employees of his subcontractors are able to identify themselves as members of the construction team.

The chosen site shall be subject to the approval of the Engineer and Employer. Possible locations for a campsite shall be pointed out at the Site Inspection. The Contractor shall conform to all local authority, environmental and industrial regulations.

Temporary and permanent fencing around the Contractor's Site establishment areas connection to the electrical supply shall be done by the Contractor where needed.

On completion of work on Site, buildings constructed by the Contractor for his own use shall be demolished, including foundations, and the ground reinstated. Underground services to these buildings shall be removed.

Covered accommodation for perishable or corrodible materials, fittings and the like shall be adequate and suitable for their purpose and, particularly in the case of cement stores, shall be well ventilated, weatherproof and waterproof with floors raised off the ground, so as to keep the materials perfectly dry and freely aerated.

Power Supply

The Contractor shall make his own arrangements concerning the supply of electrical power at the contractor's campsite. No direct payment shall be made for the provision of electrical services. Electrical power cannot be guaranteed by the service provider. During power failures and shortages, the Contractor must make his own arrangements for the provision of electricity.

The rates tendered for the relevant items in the Preliminary and General Section of the schedule shall include all costs for the establishment and maintenance of a power supply to the works.

Water Supply and Sewage

The Contractor shall erect and maintain on the site proper ablution facilities. The Contractor shall service and maintain the facilities in a clean and hygienic state for the duration of the contract period and on completion of the works from the site.

The Contractor shall make his own arrangements concerning the supply of water and sewer disposal at the contractor's campsite. No direct payment shall be made for the provision of water or sewer disposal.

The Contractor must supply all necessary materials for the water connection at a position pointed out by the Engineer. The availability of water cannot be guaranteed by the Municipality and in the event of water no longer being freely available, the Contractor must make his own arrangements to acquire it.

The rates tendered for the relevant items in the Preliminary and General Section of the schedule shall include all costs for the establishment and maintenance of water supply to the works and the Contractor shall make his own arrangements for the possible conveyance and storage of water if necessary. The Contractor will be held responsible for any wastage of water due to negligence.

Accommodation of Employees

The Contractor will be required to provide housing facilities for the Engineer's staff. No accommodation for the Contractor's employees will be permitted on site.

Water for construction

See PSA 1.5.3 above.

Facilities for the Engineer

See PSAB Engineers office under variations to the standard specifications

Telephone Facilities

Telephone and email facilities are needed on the site.

Setting out and Survey beacons (Read with SANS 1921 - 1: 2004 clause 4.15)

Before commencing the operations, the Contractor shall locate and mark all survey pegs and beacons and shall immediately submit a written report in duplicate of any missing or damaged pegs and beacons to the Engineer's, who shall verify the facts and return a countersigned copy of the report to the Contractor. Other than in the case of setting out pegs the Contractor will be held responsible for the replacement by a registered land surveyor of all beacons or pegs found damaged or missing on completion of the Works which were not reported as such by the Contractor before commencing operations.

Survey records of beacons, benchmarks, etc., replaced shall be submitted to the Engineer. Attention in this regard is drawn to Sections 35(1) and (2) of the Land Survey Act of 1927 which lays down the penalties applicable to those who are responsible for interfering with permanent survey beacons, benchmarks, reference marks or trigonometric stations.

The Contractor shall take special precautions to protect all permanent survey beacons or pegs such as bench-marks, stand boundary pegs and trigonometrical beacons, regardless whether such beacons or pegs were placed before or during the execution of the Contract. If any such beacons or pegs have been disturbed by the Contractor or his employees, the Contractor shall have them replaced by a registered land surveyor at his own cost.

EXISTING SERVICES (READ WITH SANS 1921 - 1: 2004 CLAUSE 4.17)

The Contractor shall make himself acquainted with the position of all existing services before any excavation or other work likely to affect the existing services is commenced.

The Contractor will be held responsible for any damage to known existing services caused by or arising out of his operations and any damage shall be made good at his own expense. Damage to unknown services shall be repaired as soon as possible and liability shall be determined on site when such damage should occur.

All the work will be carried out on the site in Tlhabane township in the vicinity of existing services and all such services and the water supply shall always remain in operation, except where arrangements have been made for the interruption of services upon a written instruction from the Employer for the purposes of carrying out the Works under this Contract.

Existing overhead and underground services may be indicated on the drawings held by the respective service providers. Should the Contractor find evidence of possible buried services, he shall notify the Engineer immediately thereof. The Engineer will assess the situation and instruct the Contractor on an appropriate course of action to be taken.

The Contractor shall be responsible for checking the locations of all services and to ensure that no damage is cause by construction operations.

The Contractor, before starting any excavations or where indicated in the scope of work or site information that underground services either cross or are located adjacent to the Works that is to be constructed, such services shall be exposed by hand ahead of trenching operations to enable any changes that might be needed in the design of the pipelines to be made timeously. Care shall be taken in exposing such services to avoid damaging them. An item has been allowed for in the Bill of Quantities for hand excavation or other methods to search for existing services.

All cables and pipes shall be considered "live" unless confirmed otherwise by the relevant service authority.

Services belonging to the following service owners will be encountered:

Service owner	**Type of service**
Eskom	Electrical/Power lines
Rustenburg Local Municipality	Sewer, water and electrical infrastructure
Telkom	Telephone/Optic fibre lines

HEALTH AND SAFETY (READ WITH SANS 1921 - 1: 2004 CLAUSE 4.18)

General statement

It is a requirement of this contract that the Contractor shall provide a safe and healthy working environment and to direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end the Contractor shall assume full responsibility to conform to all the provisions of the Occupational Health and Safety Act (OHSA) No 85 and Amendment Act No 181 of 1993, and the OHSA 1993 Construction Regulations 2014 issued on 08 February 2014 by the Department of Labour.

For this contract the Contractor is required to confirm his status as mandatory and employer in his own right for the execution of the contract by entering into an agreement with the Employer in terms of the Occupational Health and Safety Act in the form as included in section C1.1.7.

Health and Safety Specifications and Plans

Employer's Health and Safety Specification

A Health and Safety Specification is included in Section C5.2, of the tender documents.

Tenderer's Health and Safety Plan

The Tenderer shall submit with the tender his own documented Health and Safety Plan proposed to be implemented for the execution of the work under the contract. The Health and Safety Plan must at least cover the following:

(a) a proper risk assessment of the works, risk items, work methods and procedures in terms of Regulations 7 to 28.

pro-active identification of potential hazards and unsafe working conditions.

provision of a safe working environment and equipment.

statements of methods to ensure the health and safety of subcontractors, employees and visitors to the site, including safety training in hazards and risk areas (Regulation 5).

monitoring health and safety on the site of works on a regular basis and keeping of records and registers as provided for in the Construction Regulations.

details of the Construction Supervisor, the Construction Safety Officers, and other competent persons he intends to appoint for the construction works in terms of Regulation 6 and other applicable regulations; and

details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2014.

The Contractor's Health and Safety Plan will be subject to approval by the Employer, or amendment, if necessary, before commencement of construction work. The Contractor will not be allowed to commence work, or his work will be suspended if he had already commenced work before he has obtained the Employer's written approval of his Health and Safety Plan.

Time lost due to delayed commencement or suspension of the work because of the Contractor's failure to obtain approval for his safety plan, shall not be used as a reason to claim for extension of time or standing time and related costs

Cost of compliance with the OHSA Construction Regulations

The rates and prices tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the Act, the Construction Regulations and the Employer's Health and Safety Specification as applicable to this contract.

Should the Contractor fail to comply with the provisions of the Construction Regulations, he will be liable for penalties as provided in the Construction Regulations and in the Employer's Health and Safety Specification.

MANAGEMENT OF THE ENVIRONMENT (READ WITH SANS 1921 - 1: 2004 CLAUSE 4.19)

Respect for the environment is an important aspect of this contract and the Contractor shall pay special attention to the following:

Natural Vegetation

The Contractor shall confine his operation to the limits of the existing Tlhabane for the purpose of constructing the works.

Only those trees and shrubs directly affected by the works and such others as the Engineer may direct in writing shall be cut down and stumped. The natural vegetation, grassing and other plants shall not be disturbed other than in areas where it is essential for the execution of the work or where directed by the Engineer.

Fires

The Contractor shall comply with the statutory and local fire regulations. He shall also take all necessary precautions to prevent any fires. In the event of fire the Contractor shall take active steps to limit and extinguish the fire and shall accept full responsibility for damages and claims resulting from such fires which may have been caused by him or his employees.

Environmental Management Plan

In addition to the above all requirements according to the Environmental Management Plan will be adhered to.

CONTRACT NAME BOARD

Two official contract name boards are required for this contract. One is to be located at the main road coming from the Zinniaville heading to Seralang, at the entrance road going into the settlement. The other shall be located at the construction site.

RAILWAY FACILITIES

The nearest railway line is at the demarcation between Seraleng and Zinniaville Industrial, approximately 700m from the nearest portion of the site

SECURITY CLEARANCE OF PERSONNEL

Tenderers should note that the Rustenburg Local Municipality may require that Security Clearance investigations be conducted on any number of the Tenderer’s personnel.

If so required, by the Rustenburg Local Municipality, the Tenderer must remove personnel as indicated immediately and ensure that they have no access to the works or documentation or any other information pertaining the site.

The Employer shall not be liable for any cost concerning the removal of personnel or the effect thereof on the execution of the work.

SUPPLY OF MATERIALS

All material to be used in the Works is to be supplied by the Contractor.

The Contractor shall ensure that the work is not delayed due to the lack of materials on Site, by placing orders for material required under this Contract as soon as possible. No extension of time will be allowed for any delay due to the supply of materials.

Although the quantities have been carefully calculated, it must be considered as approximate only and the Contractor, before ordering any materials, should check the quantities required. The bill of quantities is provisional.

EXECUTION OF THE WORKS

Inspection by the Engineer

No portion of the work shall be proceeded with until the Engineer or his representative has examined and approved the previous stage. If any work is covered or hidden from view before the Engineer or his representative has inspected the work, the Contractor shall at his own cost expose the covered or hidden work for inspection. The Contractor shall also be responsible for making good any work damaged during the uncovering.

Certificate of Completion

When all the work under the Contract have been completed to the entire satisfaction of the Engineer, he will issue a certificate of completion to the Contractor informing the Contractor of the date at which the works are deemed to be completed and accepted by the Employer.

The sureties provided by the Contractor for the fulfilment and completion of the Contract in terms of the Form of Agreement will be released upon the issue of the Certificate of Completion.

SOCIO-ECONOMIC DEVELOPMENT REQUIREMENTS

Definitions and criteria

a) **"Actual %"** means Actual value (including adjustments in accordance with the Contract divided by the Contract Price.

b) "**Local Project Steering Committee**" means the official community communication channel that was established by the municipality.

The PSC is to be the point of contact for all project SED related matters.

c) **"Black People"** refers to the definition in the South African Broad Based Black Economic Empowerment Act, Act No 53 of 2003 as amended by section 1(b) of Act No. 46 of 2013.

d) **"Black Women"** refers to women who are Black People as defined in the South African Broad Based Black Economic Empowerment Act, Act No 53 of 2003 as amended by section 1(b) of Act No. 46 of 2013.

e) **"Black Owned"** refers to ownership of ≥51% by Black People.

f) **"Contract Price"** refers to the definition under the GCC 2015 Clause 1.1.1.10

g) **"Women Owned"** refers to ownership of ≥30% by Women.

h) **"Exempted Micro Enterprise**" is any enterprise with an annual Total Revenue of R10 Million or less.

i) **"Local"** means the Project Area.

j) **"Qualifying Small Enterprise"** is any enterprise with an annual Total Revenue of between R10 million and R50 million.

k) **"Small, Medium, Micro, Cooperative Enterprises"** is any enterprise that is an EME or a QSE.

l) **"Staff Levels"** refer to the categorisation of staff utilised by the Contractor. All staff shall be assigned to one of the four levels defined as follows:

- **"Unskilled Labour":** work which requires no special training or experience for performing the work adequately, such as manual heavy physical work.

- **"Semi-skilled Labour":** work which requires a degree of training and skill involving operating machinery or a construction trade, such as bricklaying, carpentry, steel fixing, welding, electrical work and plumbing while under supervision. This level shall include junior administrative staff.

- **"Skilled Labour"**: work which requires special skill, training, knowledge, and ability to do unsupervised work and is typically supported by recognised certification as a Machine Operator, Certified Bricklayer, Carpenter, Steel Fixer, Welder, Electrician and Plumber. This level shall include senior administrative and on-site supervisory staff.

- **"Professional and Management":** work requiring higher-order skills than the Unskilled Labour, Semi-skilled Labour and Skilled Labour levels, being all staff who would typically be housed in the Management Camp.

m) **"Youth"** are people under the age of 35.

Key resources

The Ward Councillor/Project Steering Committee (PSC) will identify a Community Liaison Officer (CLO) to facilitate liaison between the Contractor and the community and amongst other things to ensure that the employment of local labour proceeds smoothly.

All decisions regarding identification and hiring of labour, relieving labour of their duties, local problems and any other matter of local importance related to the Contract, will be made in consultation with the CLO.

The CLO needs at least a high school diploma and should have excellent communications skills (written and oral), the ability to work with a wide variety of people, and strong organizational skills. If possible, the CLO should be from the local communities closest to the Project.

There will be a CLO appointed by the Contractor, but nominated by the Ward Councillor/PSC, and accountable to the PSC.

SOCIO-ECONOMIC OBJECTIVES

The preference criteria for the Contract covers a broad range of parameters to obtain maximum benefit to Local people and companies. The objectives are to maximise:

- Procurement and employment opportunities Local suppliers and individuals.
- Skills and technology transfer through training of individuals.
- Participation by Black, small, medium-sized, and micro enterprises, and cooperatives.
- Implementation of the project in a socially responsible and sustainable manner.

The Employer is bound by legislative obligations in South Africa relating to employment, preferential procurement and enterprise development and skills development, aimed at contributing to economic growth and expansion of the supplier base in the construction sector in the Project Area, as follows:

Employment

The Employer has the objective of ensuring that employment of labour conforms to the following principles:

- Employment of unskilled labour will be sourced from the Project Area.

Enterprise Development

The Employer aims to develop established QSEs and EMEs, (that are at least 51% Black Owned), to enable them to implement appropriate business management systems and be able to undertake future projects either independently or at JV partner level.

Training & Skills Development

The Employer is committed to the development of unskilled labour. To give effect to this objective, the Contractor is required to institute a training and skills development programme aimed primarily at improving the literacy and skills of site-based staff.

EMPLOYMENT

Employment Goals

The Contractor is to employ local labour that totals 1% of the Contract Price. The Contractor is to ensure that the labour employed is indeed local by making use of the CLO.

Implementation Requirements

Recruitment through the PSC and CLO

All local labour is to be employed with the assistance of the PSC/Ward Councillor through the CLO. The Contractor to ensure that the following is actioned:

- Obtain list from the CLO of people (with contact details) seeking employment.
- If such a list is not available, the Contractor is set up a list with the assistance of the PSC and CLO.
- Advise the CLO of the successful applicants and when they are to report to site.
- Register and address employment process complaints.
- Keep a register of local staff employed and furnish details to the PSC and CLO; and
- Report on local labour recruitment, presents records and inform of any issues at monthly meetings.

Signs are to be placed on site that local people seeking employment should contact the CLO who will assist.

Labour Recruitment Process

The following steps shall be followed in the recruitment of unskilled labour:

- Registration of unskilled labour, in the Project Area, shall be done by the CLO.
- The Contractor will keep a list of applicants as submitted by the CLO to ensure appointments are on a first-come-first-served basis.
- The employment list must be presented to the community should it be required.
- The Contractor is to manage this list and update it as new positions are filled.
- The Contractor shall be responsible for the employment and induction process, including contracts of employment, health screening, confirmation of fitness to work, and induction training (The Contractor will be allowed to take a larger number than required, in the event that some candidates fail any of the above tests);
- The Contractor will provide written reasons for failure, in the case of health the detailed report will be confidential and will only be disclosed to the affected individual; and
- Good labour relations shall be maintained by employers and employees.

Labour Recruitment Requirements

The Contractor shall comply with the following requirements:

a) Abide by the Labour Recruitment Guidelines.

b) Refrain from recruiting / bringing with them unskilled labour from outside the Project Area.

c) Advertise vacant positions with the CLO and give people enough time to mobilise.

d) Take responsibility for the employment and induction process, including contracts of employment, health screening, and confirmation of fitness to work. Should a candidate be judged unsuitable for the position the Contractor shall notify the CLO and PSC accordingly, with an explanation of its decision.

e) Address recruitment complaints brought up from the CLO via the PSC.

f) The Contractor shall pay his employees and shall ensure that his Subcontractors pay their employees rates of remuneration not less than that prescribed by legislation and applicable to the area of the Works.

g) The Contractor, in the fulfilment of his obligations under the Contract, shall observe conditions of employment for those trades and occupations which are customary in the area in which the Works are to be constructed. The Contractor shall also practice and ensure that his Subcontractors practice a policy of equal remuneration, conditions of employment and benefits for people of equal skills and productivity.

h) As and when required by the Engineer, the Contractor shall allow and shall ensure that his Subcontractors allow the Engineer to audit or to arrange an audit of the Contractor's or his Subcontractors' records and thereby monitor the performance by the Contractor of the obligations he has undertaken. In the event of the Engineer certifying that the Contractor has failed to carry out or has failed to ensure that his Subcontractors are carrying out any such obligations the Contractor shall make good the default certified by the Engineer within 14 days from such certificate.

i) Notwithstanding anything elsewhere contained in the Contract, the Contractor shall recognise and ensure that his Subcontractors recognise the right and freedom of their respective employees to be members of trade unions of the employee's choice as may be permitted by legislation and the rights of such unions to bargain for improvement in the terms and conditions of employment of their members; and

SUB-CONTRACTING AND SUPPLIERS

Sub-contracting and Suppliers Goals

Actual procured spend on sub-contractors and suppliers must be 25% of the Contract Price on Black-owned EMEs and QSEs and must be spent on Local Black-Owned QSEs, EMEs or companies.

For avoidance of doubt the procurement spend shall be calculated per category as a percentage of total Contract Price.

Implementation Requirements

The Contractor shall, within 28 days of the date of the Letter of Acceptance, make available to the Engineer, for evaluation, his elaborated and fully detailed Preferential Procurement Plan outlining the companies that will be sub-contracted or used for procurement of supplies. The list of companies must provide proof of being Black-owned and Local. Upon acceptance by the Engineer of the Contractor's Preferential Procurement Plan the Contractor may commence procurement from his approved vendors.

ENTERPRISE DEVELOPMENT

There are no Enterprise Development goals.

SKILLS DEVELOPMENT

Skills Development Goals

Unskilled Labour is to be provided with formal training.

Implementation Requirements

The Contractor is required to cooperate with the specified Training Provider.

MONITORING AND REPORTING

General

Preference targets shall be addressed throughout the contract and shall be reported monthly in the Contractor's Monthly Report using the pro forma templates to be provided by the Employer.

Monitoring of Employment

A form, in accordance with the template to be provided by the Employer, must be submitted with the Monthly Report.

Monitoring of Sub-contractors and Supplier

A form, in accordance with the template to be provided by the Employer, must be submitted with the Monthly Report.

Monitoring of Enterprise Development

No monitoring will be done as there are no Enterprise Development goals.

Monitoring of Skills Development

A form, in accordance with the template to be provided by the Employer, must be submitted with the Monthly Report.

PENALTIES IN RELATION TO PREFERENCE

Actual Performance Against Contract Goals for Preference

The penalties for not achieving the above goals will be calculated as follows:

$$Labour\ Goals: P_L = 0.015F - L_s$$

$$Sub - contracting\ and\ Supplier\ Goals: P_S = 0.075F - S_s$$

$$\boldsymbol{Total\ Penalty: P_P = P_L + P_s}$$

Where:

F = Contract Price
P_L = Penalty for not meeting Local Labour goals
L_S = Actual spend on Local Labour as per goals
P_S = Penalty for not meeting sub-contractor and supplier goals
S_S = Actual spend on Sub-contractors and Suppliers as per goals
P_P = Total Penalty applied

- Note that the following limits apply to the above penalties: Should the actual spend exceed the target the Contractor will not be reimbursed the difference as the targets are minimums.

EXPANDED PUBLIC WORKS PROGRAMME (EPWP) LABOUR INTENSIVE SPECIFICATION (Read with SANS 1914 -5 2002 and Guidelines for the implementation of Labour-Intensive Infrastructure Projects under the Expanded Public Works Programme (EPWP) third edition 2015)

Labour-intensive works

Labour-intensive works shall be constructed/maintained using local workers who are temporarily employed in terms of this Scope of Work.

As much as is economically feasible all work shall be implemented by employing Labour Intensive Construction methods. Over and above the normal Building and Allied works to be implemented by employing skilled and unskilled labour the works specified in the "Guidelines for the Implementation of Labour-Intensive Infrastructure Projects under the Expanded Public Works Programme (EPWP)" shall be undertaken using Labour Intensive Construction methods.

The work will be carried using Labour- Intensive approach as much as possible. Labour-intensive works comprise the activities described in SANS 1921-5, Earthworks activities which are to be performed by hand, and its associated specification data. Such works shall be Constructed using local workers who are temporarily employed in terms of this Scope of Work.

Transport for Local Labour

The Contractor is required to provide transport each working day for all employed local labour from a central location within 1km of their place of residence, to the Site, and back again.

Labour intensive competencies of supervisory and management staff

Contractors having a relevant CIDB Contractor grading designation shall engage supervisory and management staff in labour intensive works who have either completed, or for the period 1 April 2004 to 30 June 2006, are registered for training towards, the skills programme outlined in Table 1.

Table 1: Skills programme for supervisory and management staff

Personnel	NQF level	Unit standard titles	Skills programme description
Foreman/ supervisor	4	Implement labour Intensive Construction Systems and Techniques or the equivalent QCTO qualification	This unit standard must be completed, **and**
		Use Labour Intensive Construction Methods to Construct and Maintain Roads and Storm water Drainage or the equivalent QCTO qualification	any one of these 3 unit standards
		Use Labour Intensive Construction Methods to Construct and Maintain Water and Sanitation Services or the equivalent QCTO qualification	
		Use Labour Intensive Construction Methods to Construct, Repair and Maintain Structures or the equivalent QCTO qualification	
Site Agent / Manager (i.e. the Contractor's most senior representative that is resident on the site)	5	Manage Labour Intensive Construction Processes or the equivalent QCTO qualification	Skills Programme against this single unit standard or part qualification

Labour Regulations

Payment for the labour-intensive component of the works

Payment for works identified as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the scope of work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.

Applicable labour laws

The Ministerial Determination for Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No R949 in Government Gazette 33665 of 22 October 2010, as reproduced below, shall apply to works described in the scope of work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.

Introduction

This document contains the standard terms and conditions for workers employed in elementary occupations on a Special Public Works Programme (SPWP). These terms and conditions do NOT apply to persons employed in the supervision and management of a SPWP.

In this document:

(b) "department" means any department of the State, implementing agent or contractor.

"employer" means any department, implementing agency or contractor that hires workers to work in elementary occupations on a SPWP.

"worker" means any person working in an elementary occupation on a SPWP.

"elementary occupation" means any occupation involving unskilled or semi-skilled work;

"management" means any person employed by a department or implementing agency to administer or execute an SPWP.

"task" means a fixed quantity of work.

"task-based work" means work in which a worker is paid a fixed rate for performing a task;

“task-rated worker” means a worker paid on the basis of the number of tasks completed;

“time-rated worker” means a worker paid on the basis of the length of time worked.

Terms of Work

Workers on a SPWP are employed on a temporary basis.

A worker may NOT be employed for longer than 24 months in any five-year cycle on a SPWP.

Employment on a SPWP does not qualify as employment as a contributor for the purposes of the Unemployment Insurance Act 30 of 1966.

Normal Hours of Work

An employer may not set tasks or hours of work that require a worker to work:

(c) more than forty hours in any week

on more than five days in any week; and

for more than eight hours on any day.

An employer and worker may agree that a worker will work four days per week. The worker may then work up to ten hours per day.

A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks allocated (based on a 40-hour week) to that worker.

Meal Breaks

A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.

An employer and worker may agree on longer meal breaks.

A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

Special Conditions for Security Guards

A security guard may work up to 55 hours per week and up to eleven hours per day.

A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

Daily Rest Period

Every worker is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.

Weekly Rest Period

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work (“emergency work”).

Work on Sundays and Public Holidays

A worker may only work on a Sunday or public holiday to perform emergency or security work. Work on Sundays is paid at the ordinary rate of pay.

A task-rated worker who works on a public holiday must be paid –

(d) the worker's daily task rate, if the worker works for less than four hours;

double the worker's daily task rate if the worker works for more than four hours.

A time-rated worker who works on a public holiday must be paid –

(e) the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;

double the worker's daily rate of pay if the worker works for more than four hours on the public holiday.

Sick Leave

Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.

A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.

A worker may accumulate a maximum of twelve days' sick leave in a year.

Accumulated sick-leave may not be transferred from one contract to another contract.

An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.

An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.

An employer must pay a worker sick pay on the worker's usual payday.

Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is –

(f) absent from work for more than two consecutive days: or

absent from work on more than two occasions in any eight-week period.

A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.

A worker is not entitled to paid sick leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

Maternity Leave

A worker may take up to four consecutive months' unpaid maternity leave.

A worker is not entitled to any payment or employment-related benefits during maternity leave.

A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.

A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.

A worker may begin maternity leave –

(g) four weeks before the expected date of birth; or

on an earlier date –

if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or

if agreed to between employer and worker; or

on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.

A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.

A worker who returns to work after maternity leave, has the right to start a new cycle of twenty-four months employment, unless the SPWP on which she was employed has ended.

Family responsibility leave

Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances -

(h) when the employee's child is born.

when the employee's child is sick.

in the event of a death of –

the employee's spouse or life partner.

the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild, or sibling.

Statement of Conditions

An employer must give a worker a statement containing the following details at the start of employment–

(i) the employer's name and address and the name of the SPWP.

the tasks or job that the worker is to perform; and

the period for which the worker is hired or, if this is not certain, the expected duration of the contract.

the worker's rate of pay and how this is to be calculated.

the training that the worker will receive during the SPWP.

An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.

An employer must supply each worker with a copy of these conditions of employment.

Keeping Records

Every employer must keep a written record of at least the following –

(j) the worker's name and position.

in the case of a task-rated worker, the number of tasks completed by the worker.

in the case of a time-rated worker, the time worked by the worker.

payments made to each worker.

The employer must keep this record for a period of at least three years after the completion of the SPWP.

Payment

An employer must pay all wages at least monthly in cash or by cheque or into a bank account.

A task-rated worker will only be paid for tasks that have been completed.

An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.

A time-rated worker will be paid at the end of each month.

Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

Payment in cash or by cheque must take place –

(k) at the workplace or at a place agreed to by the worker.

during the worker's working hours or within fifteen minutes of the start or finish of work.

in a sealed envelope which becomes the property of the worker.

Information in writing

An employer must give a worker the following information in writing –

(l) the period for which payment is made.

the numbers of tasks completed, or hours worked.

the worker's earnings.

any money deducted from the payment.

the actual amount paid to the worker.

If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it

If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

Deductions

An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.

An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned.

An employer may not require or allow a worker to –

(m) repay any payment except an overpayment previously made by the employer by mistake.

state that the worker received a greater amount of money than the employer actually paid to the worker; or

pay the employer or any other person for having been employed.

Health and Safety

Employers must take all reasonable steps to ensure that the working environment is healthy and safe.

A worker must –

(n) work in a way that does not endanger his/her health and safety or that of any other person.

obey any health and safety instruction.

obey all health and safety rules of the SPWP.

use any personal protective equipment or clothing issued by the employer.

report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

Compensation for Injuries and Diseases

It is the responsibility of the employers (other than a contractor) to arrange for all persons employed on a SPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.

A worker must report any work-related injury or occupational disease to their employer or manager.

The employer must report the accident or disease to the Compensation Commissioner.

An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

Termination

The employer may terminate the employment of a worker for good cause after following a fair procedure.

A worker will not receive severance pay on termination.

A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.

A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

Certificate of Service

On termination of employment, a worker is entitled to a certificate stating –

(o) the worker's full name.

the name and address of the employer.

the SPWP on which the worker worked.

the work performed by the worker.

any training received by the worker as part of the SPWP.

the period for which the worker worked on the SPWP.

any other information agreed on by the employer and worker.

Contractor's default in payment to Labourers and Employees

Any dispute between the Contractor and labourers, regarding delayed payment or default in payment of fair wages, if not resolved immediately may compel the Employer to intervene.

The Employer may, upon the Contractor defaulting payment, pay the moneys due to the workers not honoured in time, out of any moneys due or which may become due to the Contractor under the Contract.

Provision of Hand tools

The Contractor shall provide his labour force with hand tools of adequate quality, sufficient in numbers and make the necessary provisions to maintain the tools in good and safe working conditions

Reporting

The Contractor shall submit monthly returns/reports as specified below:

(p) Signed Muster rolls/pay sheets of temporary workers and permanent staff detailing the number, category, gender, rate of pay and daily attendance.

Copies of certified identity documents of workers

Number of persons who have attended training including nature and duration of training provided

Assets created, rehabilitated or maintained in accordance with indicators in the EPWP M&E framework

Plant utilization returns

Progress report detailing production output compared to the programme of works

EMPLOYMENT OF UNSKILLED AND SEMI-SKILLED WORKERS IN LABOUR-INTENSIVE WORKS

Requirements for the sourcing and engagement of labour.

Unskilled and semi-skilled labour required for the execution of all labour-intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.

The rate of pay set for the project is R 191.60 per day.

Tasks established by the Contractor must be such that:

(q) the average worker completes 5 tasks per week in 40 hours or less; and

the weakest worker completes 5 tasks per week in 55 hours or less. The Contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of (c) above.

The Contractor shall, through all available community structures, inform the local community of the labour-intensive works and the employment opportunities presented thereby. Preference must be given to people with previous practical experience in construction and / or who come from households:

(r) where the head of the household has less than a primary school education.

that have less than one full time person earning an income.

where subsistence agriculture is the source of income.

those who are not in receipt of any social security pension income

Specific provisions pertaining to SANS 1914-5

Definitions

Targeted labour: Unemployed persons who are employed as local labour on the project.

Contract participation goals

There is no specified contract participation goal for the contract. The contract participation goal shall be measured in the performance of the contract to enable the employment provided to targeted labour to be quantified.

The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task rated workers, comprise all wages paid, and any training allowance paid in respect of agreed training programmes.

Terms and conditions for the engagement of targeted labour

Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

Variations to SANS 1914-5

The definition for net amount shall be amended as follows:

(s) Financial value of the contract upon completion, exclusive of any value added tax or sales tax which the law requires the employer to pay the Contractor.

(t) The schedule referred to in 5.2.2.3 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.

Training of targeted labour

The Contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.

The cost of the formal training of targeted labour, will be funded by the provincial office of the Department of Labour. This training should take place as close to the project site as practically possible. The Contractor, must access this training by informing the relevant provincial office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of persons that will undergo training and when such training is required. The employer must be furnished with a copy of this request.

A copy of this training request made by the Contractor to the DOL provincial office must also be faxed to the EPWP Training Director in the Department of Public Works.

The Contractor shall be responsible for scheduling the training of workers and shall take all reasonable steps to ensure that each beneficiary is provided with a minimum of six (6) days of formal training if he/she is employed for 3 months or less and a minimum of ten (10) days if he she is employed for 4 months or more.

The Contractor shall do nothing to dissuade targeted labour from participating in training programmes.

An allowance equal to 100% of the task rate or daily rate shall be paid by the Contractor to workers who attend formal training, in terms of d above.

Proof of compliance with the requirements of b to f must be proven.

Typical construction work to be executed applying labour intensive principles

- Trenching for pipelines, cables and restricted soft excavations
- Pipe/ cable laying- Pipe/ cable backfilling
- Installation of pipe specials
- Building works and block paving
- Steel fixing
- Small concrete works

	SABS 1200 A	:	General
	SABS 1200 AB	:	Engineer's Office
	SABS 1200 C	:	Site Clearance
	SABS 13200 D	:	Earthwork
	SABS 1200 DB	:	Earthwork (pipe trenches)
	SABS 1200 DA	:	Earthworks (small works)
	SABS 1200 G	:	Concrete (Structural)
	SABS 1200 GA	:	Concrete (Small Works)
	SABS 1200 GB	:	Concrete (Ordinary Building)
	SABS 1200 H	:	Structural Steel Works
	SABS 1200 L	:	Medium Pressure Pipelines
	SABS 1200 LB	:	Bedding (Pipes)
	SABS 1200 LD	:	Sewers
	SABS 1200 LE	:	Storm Water Drainage
	SABS 1200 MJ	:	Segmented Paving
	SABS 1200 MK	:	Kerbing and Channelling

PS 10.2 **Particular Specification**

PSVC	:	Security Fencing (Palisade Fencing)
PSW	:	Building work
PME	:	Mechanical and Electrical Project Specifications
SECTION D	:	Small Contractor Development, Training and Community Liaison

PART 2 : VARIATIONS ON STANDARDISED SPECIFICATIONS

Should any requirement of the Project Specification conflict with any requirement of the Standardized or Particular Specification, the requirement of the Project Specification shall prevail.

SABS 1200 A: GENERAL

PSA 1 MATERIAL (Subclause 3.1)

All the material required for this contract shall bear the official standardization mark.

PSA 2.1.2 Restrictions on Employee Accommodation

No housing is available for the Contractor's employees, and the Contractor shall make his won arrangements to house his employees and transport them to site.

The Employer will place at the disposal of the Contractor an area to enable him to erect his site office, workshops, stores, and any temporary housing the Contractor may with to erect for his personnel. The temporary housing and ablution facilities shall comply with the requirements of the local Authority.

PSA 4 TESTING

The cost of all testing to be carried out by the Contractor in terms of the requirement of the relevant SABS 1200 standards shall be included in the rates for the various work items listed in the Schedule of Quantities No separate payments shall be made in this regard.

SABS 1200 AB : ENGINEER'S OFFICE

PSAB 1 SURVEY EQUIPMENT (Subclause 5.5)

The Contractor shall provide the following survey equipment on the site from the commencement to the completion of the Works:

1. 1 Tachometer capable of reading 20 seconds of arc;
2. 1 Engineer's level and level staff
3. 2 Tachometer staffs graduated metrically;
4. 1 Steel tape of length 30m.

The tachometer may be shared by arrangement between the Contractor and the Engineer's Representative, but the remaining instruments shall be provided to the exclusive use of the Engineer's Representative. The Contractor shall keep the equipment continuously insured against any loss, damage, or breakage and he shall indemnify the Engineer and the Employer against any claims in this regard. Upon completion of the whole of the works, the ownership of the equipment's shall revert to the Contractor.

The Contractor shall maintain the equipment in good working order and keep it clean throughout the contact period.

PSAB 2 SURVEY ASSISTANTS (Subclause 5.5)

The contractor shall make available to the Engineer two suitably trained survey assistants for use on and about the SITE at all reasonable times for the duration of the Contract.

SABS 1200 C : SITE CLEARANCE

PSC 1 MATERIALS (Clause 3)

PSC 1.1 DISPOSAL OF MATERIAL (Subclause 3.1)

Add to this subclause:

Material obtained from clearing and grubbing and from the demolition of structures shall be disposed of in designated are indicated by the Engineer and shall be finished to the satisfaction of the Engineer.

PSC 2 CONSTRUCTION (Clause 5)

PSC 2.1 INDIVIDUAL TREES (Subclause 5.2.3.2)

Add to this subclause:

Should the Contractor remove of damage any tree marked to be preserved, a penalty of R2000.00 per tree shall be liable.

SABS 1200 D: EARTHWORKS

PSD 1 SCOPE

This specification covers earthworks carried out with heavy plant or light plant, or by hand, for general excavations, short .trenches, terracing and landscaping. It covers the requirements for siteworks, excavations for foundations for bridges, buildings and general structures. It deals with safety precautions, classification of materials, excavation, filling, compaction and finishing.

NOTE: The standards referred to in the specification are listed in Appendix A.

PSD 3 MATERIALS

PSD 3.1 CLASSIFICATION FOR EXCAVATION PURPOSES

PSD 3.1.1 Method o f Classifying

The Contractor may use any method he chooses to excavate any class of material but his chosen method of excavation shall not determine the classification of the excavation. The Engineer will decide on the classification of the materials.

The classification will be based on inspection of the material to be excavated and on the criteria given in 3.1.2(a)-(e), as applicable. All equipment specified in 3.1.2(a)-(C) shall be in good mechanical condition.

"Efficiently" as used in 3.1.2(a)-(c) shall be taken to mean "in a manner that can reasonably be expected of a contractor, having regard to the production achieved".

In the event of disagreement between the Contractor and the Engineer, it shall be the responsibility of the Contractor, if so required and subject to the terms of 4.1, to make available at his own expense such mechanical equipment as is specified in 3.1.2(a)-(c), in order to assess the reasonable removability or otherwise of the material. The Engineer's decision on the classification shell then, subject to the relevant provisions of the contract, be final and binding.

PSD 3.1.2 Classes of Excavation

The excavation of material will be classified as follows for purpose of measurements and payment:

a) Soft excavation

1 Soft excavation, other than in restricted excavation, shall be excavation in material that can be efficiently removed or loaded, without prior ripping, by any of the following plant:

i) a bulldozer of mass (including mass of ripper if fitted) approximately 22 t and flywheel power approximately 145 kW, or

ii) a tractor-scraper unit of total mass approximately 28 t and flywheel power approximately 245 kW, pushed during loading by a bulldozer equivalent to that specified in (b)(l) below, or

iii) a track type front-end loader of mass approximately 22 t and flywheel power approximately 145 kW.

2 In the case of restricted excavation, soft excavation shall be excavation in material that can be efficiently removed by a back-acting excavator of flywheel power approximately 0, l0 kW per millimetre of tined-bucket width, without the use of pneumatic tool such as paving breakers.

b) Intermediate excavation

1 Intermediate excavation, other than in restricted excavation, shall be excavation (excluding soft excavation) in material that can be efficiently ripped by a bulldozer of mass approximately 35 t, fitted with a single-tine ripper suitable for heavy ripping, and of flywheel power approximately 220 kW.

2 In the case of restricted excavation, intermediate excavation shall be excavation (excluding soft excavation) in material that requires a back-acting excavator of flywheel power exceeding 0,lO kW per millimetre of tined-bucket width or the use of pneumatic tools before removal by equipment equivalent to that specified in (a)(2) above.

c) Hard rock excavation

1 Hard rock excavation, other than in restricted excavation, shall be excavation (excluding boulder excavation) in material that cannot, before removal, be efficiently ripped by a bulldozer equivalent to that specified in (b)(l) above.

NOTE: Such excavation generally includes material such as formations of unweathered rock that can be removed only after blasting.

2 In the case of restricted excavation, hard rock excavation shall be excavation in material (excluding boulder excavation) that cannot be efficiently removed without blasting or without wedging and splitting.

d) Boulder excavation Class A.

Boulder excavation Class A shall be excavation in material containing more than 40 % by volume of boulders of size in the range 0,03-20 m3, in a matrix of soft material or smaller boulders.

Excavation in dolomite formations other than solid dolomite will be classed as boulder excavation Class A if the formation contains more than 40 % by volume of lumps of hard dolomite of size in the range 0,03-20 m3, in a matrix of soft material or smaller lumps of hard dolomite.

Excavation of solid boulders or lumps of size exceeding 20 ms will be classed as hard rock excavation.

Excavation of fissured or fractured rock will not be classed as boulder excavation but as hard rock or intermediate excavation, according to the nature of the material.

e) Boulder excavation Class B. Boulder excavation Class B shall be excavation of boulders only, which

1. Are in a material containing 40 % or less by volume of boulders of size in the range of 0, 03-20 m³, in a matrix of soft material or smaller boulders, and which

2 require individual drilling and blasting in order to be loaded by a track type front-end loader or back-acting excavator, as the case may be, as specified in (a)(l) or (a)(2) above.

The excavation of the rest of the material will be classed as soft or intermediate excavation, according to the nature of the material.

PSD 3.2 CLASSIFICATION FOR PLACING PURPOSES

PSD 3.2.1 Material Suitable for Embankments and Terraces

The following materials are, in general, suitable for embankments and terraces:

a) Material having a CBR of at least 3 % at the minimum specified density (Compacted at OMC) and a PI not exceeding 18;

b) Hard or rock material having a maximum dimension of 300 mm;

c) Both clay or clayey material of liquid limit exceeding 40 or PI exceeding 18 (or both), and rock or boulders having a maximum dimension greater than 300 mm, provided that they:

i) are not placed against structures, and
ii) are placed in predetermined quantities and in specified parts of the fill , as directed.

PSD 3.2.2 Material Suitable for Replacing Overbreak in Excavations for Foundation.

Where, in excavations for foundations, replacement of overbreak with backfill is authorized, the backfill shall be capable of sufficient compaction to avoid settlement and capable of placement without significant voids.' The backfill shall not contain appreciable quantities of organic matter or stones of average dimension exceeding the lesser of 150 mm or two-thirds of the thickness of the layer being compacted.

In addition, the backfill shall be approved graded material having a P I not exceeding 10 and a CBR of at least 10 % a t the minimum specified density compacted at OMC.

PSD 3.2.3 Material Suitable for Backfill or for Fill against Structures.

Unless a particular material is specified in the project specification for the relevant zone shown on the drawings or specified in the project specification for use against structures, the material placed as backfill or as fill with in 500 mm of structures shall comply with 3.2.1 except that it shall not contain more than 10 % rock or hard fragments retained on a sieve of nominal aperture size 50 mm.

PSD 3.3 SELECTION

PSD 3.3.1 General.

Where the preservation of topsoil is required for later use on the Site, the Contractor shall select and stockpile such topsoil.

The Contractor need not deal selectively with materials from general excavation unless he is expressly required to do so in terms of the project specification or any other earthworks Specification that forms part of the contract

PSD 3.3.2 Backfilling and Embankments.

Sufficient material arising from excavations for footings and the like , and that is suitable for backfilling or for filling against the finished structures, shall be stockpiled in the vicinity o f the structures.

All other material from excavations shall be disposed of on the Site o r with in the freehaul distance as directed and in such a manner that the Contractor can ensure that material is placed in the correct position in embankments (see 5.2.3.1). Any material that is below the finished level of an excavation and that the Engineer considers to be unsuitable shall be excavated and disposed of as directed. The resultant space shall be refilled with backfill and compacted as specified.

PSD 4 PLANT

PSD 4.1 GENERAL

Plant shall be suitable for the production of the end result required under the conditions applicable to the Site.

Although, for the purpose of classifying excavations, particular items of plant are specified in 3.1, the Contractor is not obliged to provide or use those specified items of plant for carrying out the work. However, should those specified items not be freely available in good working order on the Site, the Engineer shall be entitled to decide the classification of materials and types of excavation on the basis of the good-working-order-performance of the items of plant provided by the Contractor, prorate a to the theoretical performance of the items specified (see 3.1.1).

PSD 4.2 COMPACTION PLANT.

The plant used for applying the dynamic load, controlling the moisture content, and grading or mixing, shall be capable of achieving the compact ion specified with the materials available for the construction of the Works.

PSD 4.3 TRANSPORT.

Each vehicle and item of plant provided by the Contractor for the movement of materials shall conform to the requirements of the applicable road traffic ordinance if the vehicle or item of plant is required to operate over any public highway, road or street or over any private road or parking area that has been surfaced.

Where any of the Contractor's operations or the movement of any of the Contractor's vehicles or mobile plant, or any combination of such activities, causes damage to the surface of any area normally open to the public, the Contractor shall repair such surface as a matter of urgency and at his own expense.

PSD 4.4 DETECTORS.

Where so required in terms of 5.1.2.2 or of the schedule, the Contractor shall provide and use equipment that is suitable for the location of underground service pipes and cables.

PSD 5 CONSTRUCTION

PSD 5.1 PRECAUT IONS

PSD 5.1.1 Safety

PSD 5.1.1.1 Barricading and lighting.

In terms of the applicable regulation of the Machinery an occupational safety Act, 1983 (Act 6 of 1983), every excavation that is accessible to the public or that is adjacent to a public road or thoroughfare or by which the safety of persons may be endangered, shall be

a) Adequately protected by a barrier or fence of height at least 1 000 mm and as close to the excavation as practicable; and

b) Provided with red warning lights a t night.

The Contractor shall employ watchmen to ensure that barricades and lights are effective at all times.

PSD 5.1.1.2 Safeguarding of excavations

a) The contractor or his agent or representative appointed in writing shall be deemed to be and shall be both the "excavator" and "a person competent to inspect bracing and shoring" as defined and required in terms of the Machinery and Occupational Safety Act.

b) Should the depth of an excavation or the nature of the material excavated render the sides of the excavation liable to movement that might endanger the Works or the workmen engaged on the excavation.

1. The sides of the excavation shall be supported by suitable timber or other sheeting adequately strutted and braced, all being properly assembled and having sufficient strength and stiffness to prevent movement in the materials supported,

   or

2. Alternatively, the Contractor may, subject to the approval of the Engineer, so reduce the slope of the excavated face or faces that any danger t o the Works or the said workmen is removed.

c) The Contractor shall make good any fall of rock or earth due to rain, flooding, insufficient timbering or other cause, and shall filling at his own expense any cavities so formed as directed or using approved means.

d) Without relieving the Contractor in any way of his responsibility, the Engineer may order additional lateral support for, or the sloping or reduction of the slope of, the sides of any excavation.

e) During the progress of each excavation, the Contractor shall report to the Engineer the presence of bedding planes inclined towards; the excavation, seepage water and any other feature that may affect the stability of the excavation, as soon as the presence of such feature or features is known.

f) All timbering and sheeting shall be removed from the excavation before the completion of the work, unless the written permission of the Engineer allowing any portion to remain is obtained.

PSD 5.1.1.3 Explosives.

Should blasting be necessary, the Contractor shall take every pre-caution to protect the Works and persons, animals and property in the vicinity of the Site. The Contractor will be held responsible for any injury or damage caused by any blasting operations and shall, at his own expense, make good such damage.

The transportation, storage and use of explosives shall comply with the requirements of the Explosives Act, 1956 (Act 26 of 1956), or with Chapter 9 of the regulations published in terms of the Mines and Works Act, 1956 (Act 27 of 1956), as applicable.

A copy of each blasting permit issued to workmen, and of each permit issued to the Contractor to cover the purchase, storage and transportation of explosives, shall be handed to the Engineer.

The Contractor shall grant the Engineer access to all records maintained for the Inspector of Explosives or the Government Mining Engineer, as the case may be when blasting to specified profiles, the Contractor shall so arrange the holes and charges that the resulting exposed surfaces are as sound as the nature of the material permits.

The Contractor shall make good at his own expense any additional excavation necessitated by the shattering of rock in excess of any overbreak allowance specified in the project specification or in any other earthworks specification or given on a drawing.

PSD 5.1.2 Existing Services

PSD 5.1.2.1 General

The provisions of Subclause 5.4 of SABS 1200 A or of Subclause 5.2 of SABS 1200 AA, as relevant shall apply in addition to the requirements of 5.1.2.2-5.1.2.4 below.

PSD 5.1.2.2 Detection, location and exposure.

(The drawings show the position of existing services based on the best information available).

The Contractor shall verify the position of all services and all other obstacles and existing works on the Site.

Manholes, valve boxes and the like will be regarded as known services.

Before commencing construction in any particular area, the Contractor shall verify the positions of services and report to the Engineer any that are missing.

Where any underground services are shown on the drawings, the Contractor shall have the equipment referred to in 4.4 available on the Site for as long as is necessary to detect and locate such services and, if so ordered, he shall excavate by hand to expose such services in areas and in a manner and at a time agreed upon with the Engineer (see 8.3.8.1).

PSD 5.1.2.3 Protection of cables.

The Contractor shall advise the Engineer at least 7 days in advance of the actual date on which he proposes to excavate near any cable. He shall not use mechanical equipment to excavate within 3 m of the estimated position of any cable and shall, if necessary, expose the cable by means of hand excavation carried out under proper supervision. When so instructed, the Contractor shall backfill such cable trenches with approved material to the compaction density ordered.

PSD 5.1.2.3 Negligence

Where a service is damaged because of the contractor's negligence, the penalty payable by the contractor shall be as specified in the project specification and he shall make good such damage or bear the cost of the repairs, as specified.

PSD 5.1.3 Stormwater and Groundwater.

The Contractor's responsibility in terms of Subclause 5.5 of SABS 1200 A or Subclause 5.3 of SABS 1200 AA, as relevant (relating to water on the Site), will be held to include the provision of adequate protection against flooding and damage by stormwater, flow from springs, and seepage, and to include provision for the repair, at his expense, of any damage to the Works that may arise as a result of the inadequacy of the protection provided by him.

Except where the use of tremies has been approved, foundation excavations for structures shall be kept free of water at all times until they have been inspected and approved and concrete footings have been cast.

PSD 5.2 METHODS AND PROCEDURES

PSD 5.2.1 Site Preparation

PSD 5.2.1.1 Clearing or clearing and stripping of Site.

Prior to the start of excavation proper, if and as scheduled, all areas in which excavation is to take place or that are to be covered by terraces, banks or structures shall be

a) cleared as specified in Subclauses 5.3 and 5.4 of SABS 1200 C,
or
b) cleared as specified in (a) above and also stripped of all remaining vegetable matter and surface soil to a depth of up to 150 mm . Unsuitable material shall be disposed of as specified in 5.2.2.3.

PSD 5.2.1.2 Conservation of top soil.

When so scheduled and when there is suitable top soil within the limits of the area to be cleared, the Contractor shall remove and conserve the top soil together with any grass or other acceptable vegetation. If it is not used immediately or if it is not stockpiled in windrows clear of the working areas, the top soil shall be conserved for later use in the manner specified in the project specification. The Contractor will not be required to remove top soil from any area in which the average depth of soil is less than 150 mm.

PSD 5.2.1.3 Stripping or removal of overburden.

Except as required in terms of 5.2.2.2, where stripping as specified in 5.2.1.1 is required to include the removal of overburden and other unsuitable material to depths exceeding 150 mm, the details will be set out in the project specification, and a separate item will be scheduled.

PSD 5.2.2 Excavation

PSD 5.2.2.1 Excavations for general earthworks and for structures

a) After an area has been stripped as specified in 5.2.1, excavation shall be carried out first to any general levels to which the ground has to be reduced and then for

foundations, footings, etc., to the depths indicated or to such greater depth as may be required by the Engineer to ensure a satisfactory foundation. The Engineer may order or authorize additional excavation for any state purpose.

b) Except where otherwise specified, shown on the drawings, ordered or dictated by the requirements for safeguarding in terms of 5.1.1.2, excavation shall be so carried out and so trimmed to the outline of the concrete work shown on the drawings that the excavated surfaces will act as forms for the concrete works.

c) Except where provision for working space has been scheduled, each excavated surface or against which a permanent concrete structure will be placed shall be trimmed to ensure that there is no projection outside the specified tolerance excavation profile. Such surface shall be cleaned by hand or by air or other effective means to remove all loose material.

d) Immediately before any permanent construction is commenced, the bottom of each excavation shall be cleaned of all loose material, and soft material shall be rammed or removed as required by the Engineer.

Should the contractor excavate to dimension in excess f those stipulated or permitted, he shall fill in the excess at his own expense in the manner specified or approved by the Engineer. Excavated surfaces that will remain permanently exposed shall be finished off in a neat and workmanlike manner and shall be graded as shown on the drawings, to provide adequate drainage.

PSD 5.2.2.2 Borrow pits.

When the Contractor is required by the Engineer to open up borrow pits to obtain additional or selected excavated material, the Contractor shall construct the necessary access to each borrow pits site and then clear the surface of the site of a vegetable matter and rubbish. Topsoil and overburden shall be stripped and stockpiled separately unless otherwise specified or ordered. The Contractor shall so maintain borrow pits that they do not become a danger to persons and livestock.

On completion of borrowing, all unused material, including overburden but excluding topsoil, shall be returned and the sides of the pits shall be graded 1:2, or as the Engineer may direct. The stockpiled top soil shall then be spread evenly over the area of the borrow pit and, thereafter, any access constructed by the Contractor shall be scarified and the area reinstated.

PSD 5.2.2.3 Disposal

The Contractor shall not spoil, stockpile or waste any material without approval. He shall dispose of surplus and unsuitable material in areas designated on drawings or in the project specification. Spoil heaps shall be flattened to present a neat level or graded surface.

PSD 5.2.3 Placing and Compaction

PSD 5.2.3.1 Embankments.

Where approved material from excavations is insufficient to form designated embankments, the contractor shall unless otherwise ordered, obtain the additional material, as directed, from borrow pits at sites approved by the Engineer.

a) has been obtained from excavation or borrow pits or both,

b) is free of stumps, trees, rubbish and other deleterious materials, and

c) has been approved, shall be placed in the lower layers of an embankment, and material of the same or better quality (see 3.2.1) shall be placed in the upper portion of an embankment is necessary to use clay or clayey material , the Engineer may direct that such material be placed not less than 1 not more than 6 m below the finished surface

Rock having a maximum dimension exceeding 600 mm shall not be placed at the base of an embankment.

The material of each embankment shall, unless otherwise approved, be deposited in layers of thickness, before compaction, not exceeding 300 mm. The material shall be spread to form a layer that is of approximately uniform thickness, and graded over the whole area of the embankment.

Each layer shall be compacted at OMC to a density of at least 90 % of modified AASHTO maximum density in the case of cohesive soil o r 98 % in the case of no cohesive soil. Should the material be too wet, owing to rain or any other cause, it shall be harrowed and allowed to dry out to the correct moisture content before compaction is undertaken.

The Contractor shall ensure that stormwater will at at1 times be discharged uniformly over the full area of each embankment or through specially prepared and protected drainage ditches to prevent scouring of the slopes.

PSD 5.2.3.2 Backfilling of trenches and backfilling or filling against structures

a) General.

No backfilling shall be commenced until permission to do so has been given by the Engineer.

Where filling is to be placed against or around a structure, such filling shall be placed, and shall be compacted (whether it be backfilling or embankment) simultaneously on both sides of the structure to minimize unequal loading.

Where shown on the drawings or ordered, all trenches and excavations outside structures shall be carefully refilled with approved material in layers of thickness not exceeding 250 mm before compaction.

During the placing of each layer, the filling shall be well rolled and compacted, sufficient water being added uniformly to ensure that the density specified for the particular zone is achieved or, where a density is not specified, that the density achieved is at least that of the adjoining undisturbed material. Each layer shall be completed before the next is added.

Except with the consent of the Engineer, filling shall not be deposited in water.

b) Restricted. Where the use of conventional compaction plant close to a structure is not possible, the material to be compacted shall be spread in loose layers of thickness not exceeding 250 mm and compacted by means of mechanical tampers to at least the density specified for that particular zone or, where a density is not specified, to at least the density of the adjoining undisturbed material.

PSD 5.2.4 Finishing

PSD 5.2.4.1 Final grading.

On completion of earthworks to the finished level and of backfilling of all holes, trenches and the like, the whole surface shall be graded, shaped and compacted to final grades and levels. The surface shall be lightly watered as the Engineer may direct.

PSD 5.2.4.2 Topsoiling.

Where scheduled, top soil shall be placed on level and slightly graded areas and shall be lightly compacted by wheeled vehicles or by tamping, and trimmed neatly to the required lines, grades and levels. The final thickness of topsoil after compaction shall be at least 75 mm.

PSD 5.2.4.3 Grass or other vegetation.

Where and as scheduled, grass or other vegetation shall be planted after topsoiling has been completed. On completion of planting, the planted area shall be neatly trimmed and well watered.

The Contractor shall ensure that the planted areas are not permitted to dry out.

Any grass or other vegetation that fails to grow shall be replaced by the Contractor, at his expense, with fresh grass or other vegetation or seed, as appropriate, until satisfactory cover is obtained.

PSD 5.2.4.4 Pitching o f surfaces

On completion of final grading in terms of 5.2.4.1, designated surfaces shall, where so scheduled, be pitched with stone or other materials of the type and in the manner shown on the drawings and specified in SABS 1200 DK.

PSD 5.2.5 Transport for Earthworks

PSD 5.2.5.1 Freehaul

a) All haul of material imported from commercial source or borrow pits selected by the contractor will be regarded as freehaul.

b) Provided that, where applicable,

1. the drawings clearly show the boundaries of the area within which the whole o f the work (including borrowing and spoiling) is to be carried out and that the is area does not exceed 1,5 km x 1,5 km;

2. the drawings or mass diagrams (or both) clearly show the distances and the quantities to be moved in a series of cut and fill operations (including borrowing and spoiling) within a prescribed servitude, wayleave or reserve;

3. the drawings clearly show the location and distances of all excavations and designated borrow pits, embankments to be formed and disposal areas, as relevant; and provided that freehaul distances have not been specifically stated elsewhere in the contract documents, all haul, in addition to that of (a) above, will be regarded as freehaul.

In the case of any of the applicable provisions listed in (b)(I)-(3) above for which information has not been given, and provided that no other freehaul distance has been specified elsewhere in the contract documents, the freehaul distance within which the Contractor will be required to move material without separate compensation shall be 0,5 km .

PSD 5.2.5.2 Overhaul.

Transportation of all excavated material beyond the freehaul distances applicable will be regarded as overhaul. Overhaul will be classified as limited overhaul or limited overhaul plus long overhaul (see 8.3.6) based on the following ranges:

Distance beyond the end of the applicable freehaul by the shortest practicable route

Limited overhaul: ..... first 0, 5 km

Long overhaul: ..... remainder of overhaul distance

The Contractor shall not incur overhaul expenses without prior approval.

PSD 6 TOLERANCES

PSD 6.1 POSITION, DIMENSIONS, LEVELS, ETC.

The work shall be finished to Degree of Accuracy II and the permissible deviations (PD) [see Clause 6 of SABS 1200 A or Clause 6 of SABS 1200 AA, as applicable) shall, subject to Subclause 6.3 of SABS 1200 A or AA, as applicable, be within the limits given below for Degree of Accuracy II:

PSD 7 TESTING

PSD 7.1 EXPLORATORY HOLES.

To determine founding conditions or for other purposes, the Engineer may require the Contractor to drill, auger or excavate holes in advance of the start of construction. When so requested by the Engineer, the Contractor shall provide labour, tools, machinery and equipment for sinking such exploratory holes and for refilling them. Such operations will be paid as daywork.

PSD 7.2 TAKING AND TESTING OF SAMPLES.

The Contractor shall carry out sufficient tests to satisfy himself about the consistency of materials placed in embankments, around and over pipes, and as backfill to structures. Check tests will be carried out by the Engineer and the results made available to the Contractor.

PSD 7.3 MATERIAL OR COMPACTION STANDARD NOT TO SPECIFICATION.

The Engineer may carry out such check tests as he deems necessary, at any depth or on any layer. Where the Engineer's tests reveal that the material used does not comply with the applicable requirements of the specification, or that the compaction specified has not been attained, the Contractor shall so rectify the work that the material complies with the said requirements and the compaction specified is attained.

PSD 8 MEASUREMENT AND PAYMENT

PSD 8.1 BASIC PRINCIPLES

PSD 8.1.1 The basic principles of measurement and payment for all earthworks are that the rates tendered for excavation shall cover the cost of excavating and re-use of the excavated material in backfilling, forming embankments, terraces, etc., and the cost of disposal of any surplus and unsuitable material within the freehaul distance. The measurement of depths for restricted excavations as specified in 3.1.2(a)(2) will be

based on the assumption that untrimmed earthworks or bulk excavation to finished level , or both, have been completed before the commencement of restricted area excavations (see Drawing 0-2).

Separate additional payment will be made for filling excess excavation, forming banks or terraces, disposing of surplus material, or any other contingent work, only where specifically prescribed and scheduled. Where overhaul is payable, the additional distance will be measured by the shortest practicable route, in one direction only, to the nearest 0, I km, and volumes will be computed as specified in 8.2.1 and 8.2.2.

PSD 8.1.2 Excavations which are required to be backfilled will be measured as if taken out with vertical sides regardless of whether they have been taken out with sloping sides. They will be measured from the net plan of the finished concrete footing, foundation, building or concrete structure except that, in the case of conical-bottomed tanks and other such structures, the volume will be measured from the finished out line of the concrete as shown on the drawings.

PSD 8.1.3 Where extra excavation for outside formwork or working space or for any other purpose is specified or ordered or authorized prior to the start of the excavation for a structure , such excavation will be measured as part of the bulk or restricted excavation, as applicable, except where the working space is scheduled as an area(see 5.2.2.1).

PSD 8.2 COMPUTATION OF QUANTITIES

PSD 8.2.1 Earthworks will be measured by volume once only, either

a) in compacted embankment where

1. importation or borrow is designated or ordered and in quantities not exceeding those so ordered, or

2. the earthworks consist of a cut to fill operation and are required for the building of a structure of designated strength such as a dam, road, or rail embankment, or otherwise

b) in excavation.

Measurements will be to finished shapes, sections and profiles as shown on drawings or ordered, and no excavation and no embankment formed outside the specified lines and levels will be included in the measurements unless such extra work has been done on the written instructions of the Engineer.

PSD 8.2.2 Except where earthworks are carried out to simple geometric shapes, the volumes of material handled will be computed from cross-sections at suitable intervals by the method of average end areas.

Where this method of measurement is considered by the Engineer to be impracticable, the volume will be computed from the predetermined capacity o f the hauling vehicles, and each vehicle shall be loaded to at least the predetermined capacity.

The volume of material will be taken as 70 % of the said capacity in the case of soils and gravel and 50 % in the case of rock and boulder material.

Volumes of material removed incidentally during site clearing operations in terms of SABS 1200 C will be disregarded in both excavation and embankment quantities, but the volumes (computed from the areas and depths) moved in the stripping of the site in terms o f 5.2.1 or in excavation of stated depths of top soil will be deducted from the excavation or added to the embankment volume, as the case may be.

PSD 8.2.3 Should he wish to check the Engineer's quantities, the Contractor may, at his own expense, take the levels and prepare the cross-sections necessary for the measurement and computation of quantities. The Engineer may conduct such check tests on the Contractor's cross-sections as he considers necessary to confirm their accuracy and adequacy. Failure on the part of the Contractor to submit his own cross-sections

to the Engineer before commencing construction will be held to indicate his preparedness to accept the cross-sections provided by the Engineer for the purpose of measurement and payment of cut and fill quantities and, in the event of such failure, no subsequent claim in this regard will be considered.

SABS 1200 DA : EARTHWORKS (SMALL WORKS)

PSDA 1 CLASSIFICATION OF EXCAVATED MATERIAL (Subclause 3.1.2)

Delete this subclause and replace with the following:

Distinction shall be drawn, for payment purposes, between excavation in hard and soft material. All excavation for the foundations of structures shall be classified in accordance with the following classification.

Hard material

Boulders of 0, 5 cubic meter or more in volume;

Or

Material which cannot be excavated except by drilling and blasting or the use of pneumatic tools or mechanical breakers.

Soft material

All material not classified as hard material shall be classified as soft material.

The Engineer shall rule under which one of the above categories any excavation shall be classified and paid for.

PSDA 2 FREEHAUL (Subclause 5.2.6.1)

The freehaul distance within which the Contractor will be required to move material without separate compensation shall be 2, 0 km. Overhaul will be paid for the moving of material beyond that distance.

PSDA 3 MEASUREMENT AND PAYMENT (Subclause 8)

PSDA 3.1 BASIC PRINCIPLES (Subclause 8.1.1)

Change the following in this subclause:

The freehaul distance will be 2, 0 km and not 0,5 km.

SABS 1200 DB: EARTHWORKS (PIPE TRENCHES)

PSDB 2 **SPECIAL WATER HAZARDS** (Sub-Clause 5.1.2.2)

Where ground water is present during construction to such an extent that, in the opinion of the Engineer, it would hamper the placing and consolidation of the granular or concrete bedding, as specified on the Drawings, or would cause buoyancy of the pipes, the Engineer will authorize the importation of crushed stone bedding material from commercial sources in order to assist with dewatering during the bedding, laying and backfilling operations associated with the pipeline. In severe cases, and should the Engineer so instruct, the stone bedding should be wrapped in a suitable geotextile such as Bidim U24 or similar approved. Trench, bedding and backfill details are shown on drawings showing general pipeline details for the Contract.

Crushed stone bedding material shall consist of nominal 19mm crushed stone complying with the grading as specified for stone for concrete in Table 5 of SABS 1083 (as amended), and shall be well compacted in order to provide an uniform support for the pipe barrel.

At points designated by the Engineer, sumps be formed in the trench bottom from which ground water can be pumped in order to maintain the water table below the pipe bedding level.

PSDB 3 **EXISTING SERVICES** (Sub-clause 5.1.4)

Where any existing service occurs within the specified trench excavation, and the presence of such service is known before being uncovered, then the protection of the service will be scheduled and measured as provided as provided for in clause 8.3.5 of 1200DB.

Only know services (as defined in clause 5.4 of 1200A) shall be measured for payment.

Where an unknown existing service is damaged during construction, and the Engineer orders that the Contractor should undertake the repair of such service, then such repair will either be measured and paid as dayworks or alternatively as a contractual variation

If the Engineer order that an unknown existing service is required to be repaired and/or relocated by another authority, then the Contractor shall arrange such. A prime cost has been allowed in schedule 2 for reimbursement to the applicable authority.

No construction activity which may affect the integrity of telephone or electrical poles or stays may be carried out without the prior written approval of the Engineer, which approval shall only be given subject to the acceptance of a modus operandi that will ensure the integrity of such structures during construction.

PSDB 4 **EXCAVATION** (Subclause 5.4)

Where possible, the Contractor shall stockpile topsoil material alongside the trench, separate from other excavated material, for replacement upon completion of the backfill,

Classification of material for various types of hand excavation will be based on the results of a dynamic cone penetrometer. The category of material shall be determined by testing the material at regular intervals and at various depths along the centre line of the trench. A minimum of 5 tests shall be done at each location and the average number of blows of the tests shall be used to determine the category of material.

The interval between test locations shall be determined by the variation of material type but shall not exceed 50m. The depth of testing shall be determined by the variation of material type and can increase or decrease in hardness with increasing depth of excavation. The following table indicate the categories:

Category of Material	**Consistency**		**DCP Blows to Penetrate 100mm**	
	Granular	**Cohesive**	**Granular**	**Cohesive**
<u>Soft</u> Soft excavation shall be excavation in material that can be efficiently removed from the trench using a pick and shovel but not requiring prior breaking using mechanical equipment such as pavement breakers	Up to medium dense	Firm to stiff	0-6	1-5
<u>Intermediate</u> Intermediate excavation shall be excavation in material that requires loosening with a hard spike (gwala) before being removed from the trench.	Dense	Stiff to very Stiff	7-15	6-8
		Very stiff	16-50	8-15

Hard Hard excavation shall be excavation in material that requires prior breaking using mechanical equipment, such as pavement breakers with clay spades, before being removed from the trench.	Very dense			
Rock Rock excavation shall be excavation in material other than described above which by nature of the material requires prior breaking using mechanical equipment, such as pavement breakers with moil points, before being removed from the trench.	-	-	> 50	>15

PSDB 5 **TRENCH BOTTOMS** (Clause 5.5)

Should the contractor remove more ground than is required to secure the proper grade of the pipeline as shown on the long section, then the Contractor shall at his own cost backfill the excess excavation with approved selected material or concrete, as directed by the Engineer in each particular case. Where a firm foundation cannot be obtained at the grade indicated due to soft or unsuitable material, the Engineer may instruct the contractor to remove the unsuitable material and to backfill the excess depth with approved selected material or concrete, as directed by the Engineer in each particular case, at the cost of the Employer. Backfill other than concrete, shall be placed in layers of 150mm uncompacted thickness, each layer thoroughly compacted to the entire satisfaction of the Engineer, to provide adequate support for the pipe bedding to be placed on top of it.

Along its route the pipeline crosses areas of volumetrically unstable clay.

In certain of these areas the clay is encountered to depths that are deeper than the specified trench depths as shown on the long sections. In such areas, only when instructed by the engineer, the unsuitable material at the bottom of the trench shall be removed by excavation up to the residual soft rock norite, or up to 600 mm below the pipe invert level (whichever is first encountered) and disposed of as set out in clause PSD3. The resulting space shall be refilled with imported fill material and compacted at OMC to 90% of modified AACHTO maximum density in layers not exceeding 150mm in depth, before the pipe the pipe bedding is constructed. The exact details of the required works work are shown on the drawings that show general pipeline details.

No pipes, concrete screeds, concrete beds or bedding material shall be laid in any trench before the trenches have been inspected and approved by the Engineer's Representative.

PSDB 6 **DISPOSAL OF EXCAVATED MATERIAL** (Subclause 5.6.3 and 5.6.4)

All surplus material from excavation for pipework shall be disposed of in accordance with clause PSD3.

PSDB 7 **FREEHAUL AND OVERHAUL** (Subclause 5.6.8)

Refer to clause PSD5.

PSDB 8 **MEASUREMENT AND PAYMENT** (Subclause 8.3.2)

PSDB 8.1 Trench excavations shall be measured volumetrically (irrespective of length) in depth increments as follows:

(a) Up to 1.5m

(b) Exceeding 1.5m but not exceeding 205m.

(c) Exceeding 2.5m but not exceeding 3.5m

(d) Exceeding 3.5m but not exceeding 4.5m

PSDB 8.2 Stone bedding will be measured per cubic meter under the appropriate item in SABS 1200LB. Type A bedding (crushed stone wrapped in a geotextile blanket) shall be measured per linear meter along the centerline of the trench.

SABS 1200 G: CONCRETE (STRUCTURE)

PSG 1 SCOPE

This specification covers the requirements for structural concrete work (plain and reinforced) for civil engineering and building construction. It covers the basic materials, the plant and formwork required the quality, manufacture, and curing of the concrete, tolerances in workmanship, tests and acceptance criteria, and the methods by which the finished structure is to be measured for the purpose of payment.

This specification does not cover specialized aspects of structural concrete work, post- and prestressed work, and piles, caissons, cylinders, and harbour and marine works.

NOTE: The standards referred to in the specification are listed in Appendix A.

PSG 3 MATERIALS.

The Contractor shall supply in good time to the Engineer, for his approval, samples of the aggregates (and, if so ordered, of the water) that he proposes to use for the concrete and shall furnish evidence that the water and aggregates comply with the requirements of 3.3 and 3.4.

Evidence shall be in the form of either:

a) a statement from an approved laboratory of the results of tests,

or

b) an authoritative report or record of previous experience.

PSG 3.2 CEMENT

PSG 3.2.1 Applicable Specifications

Subject to the provision of 3.2.2, cement and bends of portland cement and milled granulated blastfurnace slag (see SABS 626) shall comply with the relevant requirements of the following specifications:

BS 1370 Low heat Portland cement

SABS 471 Portland cement (ordinary, rapid-hardening, and sulphate - resisting)

SABS 626 Portland blastfurnace cement

SABS 031 Portland cement 15 and rapid – hardening portland cement 15.

PSG 3.2.2 Alternative Types of Cement.

Any type of cement other than those referred to in 3.2.1 shall be used only when specifically authorized by the Engineer. (See 8.1.3.2 and 8.1.3.3)

PSG 3.2.3 Storage of Cement

Separate storage facilities shall be provided on the site for each type of cement used.

Cement that is stored on the site shall be kept under cover that provides proper protection against moisture and other factors that may promote deterioration.

Storage of cement in bulk in weather-proof silos or similar containers will be permitted provided that the cement drawn for use is measured by mass and not by volume.

PSG 3.3 WATER

Water shall be clean and free from injurious amounts of acids, alkalis, organic matter, and other substances that may impair the strength or durability of concrete.

PSG 3.4 AGGREGATES

PSG 3.4.1 Applicable Specification.

Both the coarse aggregate (stone) and the fine aggregate (sand) shall comply with the relevant requirements of SABS 1083.

PSG 3.4.2 Use of Plum.

Where plums are required to be used, or are permitted, they shall

a) be hard , clean stone of mass 15 to 55 kg;

b) constitute not more than 20 % of the volume of the concrete;

c) have no adhering film or coating;

d) be such that no plum has a dimension greater than one-third of the smallest dimension of the concrete member or greater than 300 mm, whichever is less;

e) each be surrounded by concrete of depth at least 80 mm; and

f) have an aggregate crushing value at least equal to that specified for coarse aggregate in SABS 1083.

PSG 3.4.3 Storage of Aggregates

Aggregates of different nominal sizes shall be stored separately and in such a way that

a) segregation is minimized; and

b) intermixing of different materials and contamination by foreign matter is prevented.

PSG 3.5 ADMIXTURES

PSG 3.5.1 Approval of Admixtures Required

Admixtures shall not be used in any concrete mix without the approval of the Engineer, who may require tests to be made before they are used. To facilitate approval, the Contractor shall provide the following information:

a) The trade name of the admixture, its source, and the manufacturer's recommended method of use;

b) typical dosage rates and possible detrimental effects of under-dosage and overdosage;

c) whether compounds (such as those containing chloride in any form as an active ingredient) likely to cause corrosion of the reinforcement or deterioration of the concrete are present and, if so, the chloride content (expressed as chloride ions or as equivalent anhydrous calcium chloride) by mass of admixture (see 5.5.1.4);

d) the average expected air content of freshly mixed concrete containing an admixture which causes air to be entrained when used at the manufacturer's recommended rate of dosage.

PSG 3.5.1 Air Entraining Agents.

If the use of an air-entering agent is permitted by the Engineers, test measurements shall be carried out on Site by the Contractor, as and when required by the Engineer, to determine

a) the percentage of air entrained in the concrete; and

b) the density of the concrete.

The Contractor shall provide equipment to permit measurement of entrained air at such frequencies as are required by the Engineer.

PSG 3.6 REINFORCEMENT.

Reinforcing bars shall comply with the relevant requirements of SABS 920.

Welded steel fabric shall comply with the relevant requirements of SABS 1074. Steel shall be so stacked off the ground as to prevent distortion and shall be protected from aggressive environments and contamination.

PSG3.7 STORAGE CAPACITY.

The storage capacity provided and the amount of material stored (whether cement, aggregates, steel, or water) shall be sufficient to ensure that no interruption to the progress of the work is occasioned by lack of materials.

PSG 3.8 DETERIORATED MATERIAL.

Material that has deteriorated, or that has been contaminated or otherwise damaged, shall not be used in concrete. Such material shall be removed from the Site without delay.

PSG 4 PLANT

PSG 4.1 GENERAL

All plant shall be maintained in good working order.

PSG 4.1.1 BATCHING PLANT.

The Contractor shall ensure, by regular examination, calibration, and tests, that the batching system functions efficiently and accurately and that hoppers and cement containers are kept dry and clean. The batching plant shall be such that

a) cement may be batched to an accuracy of within 2% of the mass required;

b) water may be measured, by mass or by volume, to an accuracy of within 2 % of the quantity required;

and

c) aggregate may be batched to an accuracy of within 3 % of the mass required.

In the case of an automatic plant, the weighing scales shall be so interlocked that a new batch of materials cannot be delivered until the weighing hoppers have been completely emptied of the previous batch and the scales are in balance.

Where discharge of materials from the hoppers is manually controlled, a method of signalling shall be employed to ensure that ingredients are not omitted, or are not added more than once, when a batch of concrete is being made up.

PSG 4.3 MIXING PLANT

PSG 4.3.1 General Requirements for Mixing Plant

The type and capacity of mixing machines shall be such that the rate of output of concrete is suitable for the rate of concreting. Each machine shall be capable of producing a uniform distribution of the ingredients throughout the batch and shall comply with the specification to which the manufacturer claims it has been manufactured shall be replaced. The inner surfaces of the mixer shall be clean and free from hardened concrete.

PSG 4.3.2 Approval for Short Mixing Periods

The Contractor shall obtain the Engineer's prior approval should he wish to use any particular type of mixer in respect of which

a) it has been established on site, or

b) the manufacturer has guaranteed, that efficient mixing can be consistently achieved in mixing periods shorter than those specified in 5.5.3.1(e).

PSG 4.4 VIBRATORS

Vibrators shall be capable of fully compacting of each layer of concrete where compaction by vibration is specified. At least one standby vibrator shall be available for every three (or smaller number of) vibrators necessary to maintain the rate of placing.

PSG 4.5 FORMWORK

PSG 4.5.1 Design.

Formwork shall be so designed and constructed that the concrete can be properly placed and compacted and that, subject to the tolerances specified in 6.2.3 (a) and (b), the required shapes, finishes, positions,

levels, and dimensions shown on the drawings are maintained. The formwork and joints shall be capable of resisting the dead load, including the pressure exerted by the wet concrete, wind forces, and all other superimposed loads and forces.

Where formwork is to be erected over a road, a street, or a railway, the Contractor shall so design his formwork that the full clearances required for the free movement of traffic are maintained to the satisfaction of the authority controlling such road, street, or railway. Where so required in terms of the project specification, the Contractor shall, before commencing erection, obtain the approval of such authority for the design of his formwork.

PSG 4.5.2 Finish.

The quality of formwork shall be such that the finished surface of the concrete is as scheduled or shown on the drawings or as required in terms of the project specification (see 5.2.1).

PSG 4.5.3 Ties.

The types of ties used and their position shall be such that the required finish is achieved and will not be marred by subsequent corrosion of the ties.

PSG 5 CONSTRUCTION

PSG 5.1 REINFORCEMENT

PSG 5.1.1 Bending

PSG 5.1.1.1 Reinforcing bars shall be bent to the dimensions shown on the drawings and in accordance with SABS 82.

PSG 5.1.1.2 Except as allowed in 5.1.1.3, all bars shall be bent cold and bending shall be done slowly, a steady, even pressure being used without jerk or impact.

PSG 5.1.1.3 Subject to the approval of the Engineer and provided that the bars do not depend for their strength on cold working, bars of diameter 32 mm or more may be bent hot.

PSG 5.1.1.4 Bars that are to be bent hot shall be heated slowly to a cherry red heat (not above 840 "C) and, after bending, shall be allowed to cool slowly in air. Hot bars shall1 not be quenched with water.

PSG 5.1.2 Fixing.

Steel shall at the time of the placing of the concrete, be free from loose or powdery rust, scale, oil, and other coatings that may reduce the bond between steel and surrounding concrete, affect the durability of the concrete, or initiate corrosion of the reinforcement.

Water is used for lubricating the formwork every precaution shall be taken to avoid contamination of the reinforcement by such substance.

Reinforcement shall be positioned as shown on the drawings and maintained in those positions within the tolerances given in 6.2. It shall be secured against displacement by tying at intersections with annealed wire of nominal diameter 1, 6 mm or 1, 25 nun, or by the use of acceptable clips or , if permitted by the Engineer, by welding hangers or saddles, and aligned by means of chairs and spacers of approved design.

Supporting steel to approved design will be added to the reinforcing schedule by the Engineer. Other supporting materials shall be subject to prior approval.

PSG 5.1.3 Cover

Unless otherwise shown on the drawings, the cover of concrete over reinforcement (other than over rail or structural steel reinforcement) for various environmental exposure conditions shall in no case be less than

a) the applicable value given in Table 1, measured from the outside of any bar or stirrup ,

or

b) the diameter of the reinforcement or stirrup to which the cover is measured, whichever is greater. If any substance other than

Cover over rail and structural steel reinforcement shall be at least 80 mm, unless otherwise shown on the drawings.

The cover for fire protection shall be in accordance with the relevant requirements of SABS 0144.

PSG 5.1.4 Splicing

Splices or joints in reinforcing bars shall be made only as and where shown on the drawings or as otherwise approved.

PSG 5.1.5 Protection of Exposed Bars

If left exposed for future bonding of extensions to the Works, reinforcement shall be protected from corrosion as directed.

PSG 5.2 FORMWORK

PSG 5.2.1 Classification of Finishes

Formwork will be classified in accordance with the surface condition required on the finished concrete. Such surface conditions are classified as follows and will be so scheduled:

a) Rough.

No treatment of the surface of the concrete will be required after the striking of the formwork. The finish of the concrete need not be more accurate than Degree of Accuracy III as defined in terms of Clause 6.

b) Smooth.

Imperfections such as small fins, bulges, irregularities, surface honeycombing, and slight surface discolorations shall be made good and repaired by approved methods. The finish of the concrete shall be accurate to Degree of Accuracy I1 as defined in terms of Clause 6 (see also 5 . 5 . 1 0 . 3) .

c) Special. Special finishes shall be as specified in the project specification.

PSG 5.2.2 Preparation of Formwork

Forms shall be erected with joints tight enough to prevent leakage of cement mortar.

Surfaces of forms (regardless of the material of which they are made) that are to be in contact with fresh (wet) concrete shall be treated with a coat of non-staining mineral oil or other approved material or, only in the case of timber forms, by thorough wetting of the surfaces with water, so as to ensure easy release and prevent adhesion of the formwork during stripping.

PSG 5.2.3 Re-use of Formwork.

Before re-use, all formwork shall be reconditioned, and all form surfaces that are to be in contact with the concrete shall be thoroughly cleaned.

PSG 5.2.4 Openings.

Where necessary for the proper placing of the concrete, temporary openings for cleaning, inspection, or placing purposes shall be provided and, subsequently, so closed as to provide the finish specified and to conform to the applicable tolerances given in 6.2.3(b).

PSG 5.2.5 Removal of Formwork

PSG 5.2.5.1 Formwork shall not be removed before the concrete has attained sufficient strength to support its own weight and any loads that may be imposed on it.

PSG 5.2.5.2 For this purpose and except as allowed in 5.2.5.3, the formwork shall remain in place, after placing of the concrete, for the appropriate minimum period of time given in Table 2.

Shorter periods may be used for sections of thickness 300 mm or more.
+ In cool weather (see 2 .3 (a)) , stripping times shall be determined by interpolation between the periods specified for normal and cold weather.

PSG 5.2.5.3 If the Contractor can prove to the satisfaction of the Engineer that a period shorter than the appropriate minimum given in Table 2 is sufficient to enable the concrete to comply with the requirement given in 5.2.5.1, the formwork may be removed after such shorter period.

PSG 5.2.5.4 Formwork shall be removed carefully so that shock and damage to the concrete are avoided.

PSG 5.2.5.5 Notwithstanding the provisions of 5.2.5.2 and 5.2.5.3, the Contractor shall he responsible for making good any damage to the concrete arising from the removal of formwork and its supports.

PSG 5.3 HOLES, CHASES, AND FIXING BLOCKS

No holes or chases, other than those shown on the drawings or approved by the Engineer, shall be cut or otherwise formed in the concrete. The manner of attaching fixtures to be embedded in the concrete shall be subject to approval.

PSG 5.4 PIPES AND CONDUITS

No Pipes or conduits, other than those so shown on the drawings, shall be permanently embedded in the concrete without prior approval.

PSG 5.5 CONCRETE

PSG 5.5.1 Quality

PSG 5.5.1.1 General

Concrete shall comply with the requirements for strength concrete (see 5.5.1.7) or for prescribed mix concrete (see 5.5.1.6) as applicable altered during the currency of the contract without prior approval.

PSG 5.5.1.2 Consistency

Table 3 appropriate to the type of construction, or within such other limits as are laid down

a) in the project specification;
b) by the Engineer in respect of prescribed mix concrete; or
c) by the Engineer after receipt of the Contractor's design for strength concrete, if any, in terms of

PSG 5.5.1.3 Workability.

The concrete shall be of such workability that it can be readily compacted into the corners of the formwork and around reinforcement without segregation of the materials or excessive bleeding of free water at the surface.

PSG 5.5.1.4 Chloride content.

Except where a lower value is required in terms of the project specification, the amount of chloride ion in concrete expressed as a percentage by mass of the cement shall not exceed the applicable value as given in the project specifications.

PSG 5.5.1.6 Prescribed mix concrete.

The Engineer will be responsible for the design of prescribed mix concrete and for determining the proportions of the constituent materials. The Contractor shall provide, on the site, concrete of the specified materials and in the proportions given by the Engineer.

The Engineer will specify the sources of supply of the materials in such concrete and will make available, at the time of tendering, samples of each aggregate together with information on their origin.

He will also specify the following in respect of prescribed mix concrete for each section of the work:

a) The maximum nominal size of coarse aggregate, in millimetres, and its proportion in the mix;

b) the proportion of fin e aggregate in the mix;

c) the type and proportion of cement in the mix;

d) the slump, i n millimetres, or the w/c ratio.

PSG 5.5.1.7 Strength concrete.

The Contractor shall be responsible for the design of strength concrete, and the submission of test cubes to an approved laboratory, and for the measurement of the constituent materials to produce concrete that complies with the requirements specified by the Engineer.

The Engineer will specify the following in respect of strength concrete for each section of the work:

a) The grade of concrete and position on the Works;

b) the maximum nominal size of coarse aggregate, in millimetres.

PSG 6 TOLERANCES

PSG 6.1 BASIS OF MEASUREMENT

PSG 6.1.1 General.

Permissible deviations appropriate to the degree of accuracy required will be applied to linear dimensions, position, verticality, level, squareness, and bow.

The degree of accuracy may be one of the following:

a) Degree of Accuracy III for use where a high degree of accuracy is unnecessary, e.g. mass foundations

c) Degree of Accuracy II for what is commonly called "good work";

d) Degree of Accuracy I where the use of special, as opposed to normal, methods or materials (or both) is warranted despite the probability of higher costs than are caused by the use of Degree of Accuracy II.

This may apply where, for example, prefabricated units (windows, precast panels) are required to fit in position.

PSG 6.1.2 Methods of Measurement of Deviations.

Certain deviations will be measured as set out below:

a) Any deviation from flatness of a plane surface will be measured as the maximum deviation of the surface from any straight line of length 3 m joining two points on the surface, determined by means of a straight-edge the ends of which are supported on identical blocks of suitable thickness placed over each of the points.

b) Any abrupt change in a continuous surface, including a local depression or peak in a floor or wall and any abrupt change caused by a joint in formwork will be measured as specified in (a) above.

c.) Out-of-squareness to a corner or an opening or an element such as a column will be measured by taking the longer of two adjacent sides as the base line, and determining any departure from the perpendicular of the side at either end of the base line.

Where he is required to grout holding-down bolts, or to place grout under column bases or the mortar grout shall consist of an approved mixture of

PSG 6.2 PERMISSIBLE DEVIATIONS

PSG6.2.1 General.

The Contractor shall construct each of the various parts of the Works within the limits of the applicable permissible deviation set out in 6.2.3 appropriate to the degree of accuracy specified in the project specification or shown on the drawings. If no degree of accuracy is specified, Degree of Accuracy II shall apply.

PSG 6.2.2 Concrete Surfaces.

Any departure from flatness and the height or depth of any irregularity of a finished plane concrete surface shall not exceed the applicable maximum value given in (d) (7) and (8) below. The specified

accuracy shall be achieved without any treatment except the rubbing down of hardened surfaces with carborundum blocks.

PSG 7 TESTS

PSG 7.1 FACILITIES ANV FREQUENCY OF SAMPLING

PSG 7.1.1 Facilities.

For the purposes of taking samples and carrying out tests, the Engineer shall have free access to the Works, and the Contractor shall render any assistance necessary. If so required, the Contractor shall provide storage and protection for such samples on the Site.

In addition, the Contractor shall provide slump cones and the moulds required for compressive strength testing in accordance with SABS Method 863 in sufficient quantities to enable the frequency of sampling and testing required in terms of 7.1.2 and 7.2 to be achieved.

PSG 7.1.2 Frequency of Sampling

PSG 7.1.2.1 Subject to the requirements of 7.1.2.4, while concrete of a particular grade and in sufficient quantity is being placed under the same conditions, sets of samples (each sample (see 2.3) being sufficient for 3 cubes, beams, cylinders, or prisms, as relevant) shall be taken until 30 valid test results have been obtained.

The sets of samples shall be taken in accordance with SABS Method 861, for example, as close as is practicable to the start of placing and at appropriate intervals after that, or from one particular batch and then from subsequent batches chosen at appropriate intervals.

PSG 7.1.2.2 At least one set of samples shall be taken from each day's casting and from at least every 50 m^3 of concrete of each grade placed.

PSG 7.1.2.3 Frequency of sampling shall, with due regard to the importance of the work and the eventual assessment of test results be programmed on the basis of considerations such as whether a test pertains to a particular section of work only or to the overall quality of concrete in the structure.

PSG 7.1.2.4 Only one sample shall be drawn from any one batch of concrete, and, except where otherwise ordered, no sample shall be taken of any grade until at least 3 batches of such grade have been mixed and discharged.

PSG 7.2 TESTING

PSG 7.2.1 General.

All testing shall be carried out in accordance with the methods referred to in the specification or in accordance with such other method or methods as are specified in the project specification.

PSG 7.2.2 Site Testing.

The Contractor shall ensure that Site testing is carried out by a competent technician or by a person deemed by the Engineer to be sufficiently experienced.

PSG 7.2.3 Laboratory Testing.

The Contractor shall ensure that laboratory testing is carried out by a recognized testing institution or an approved laboratory or a firm approved by the Engineer.

PSG 8 MEASUREMENT AND PAYHENT

PSG 8.1 MEASUREMENT AND RATES

PSG 8.1.1 Formwork

Formwork, other than formwork covered by 8.1.1.2, will be measured as the net area of the face of the concrete to be supported during the deposition of concrete. No deduction will be made for fillets and splays of size up to 50 mm x 50 mm or for openings of diameter up to 0,7 m or of area up to 0.5 m'²

PSG 8.1.1.2 Formwork in continuous lengths of narrow widths and of fillets or splays over 20 mm x 20 mm will be measured by length, the width or range of widths being stated in the schedule.

Boxing-out, the forming of holes, and other such operations will be measured by number, basic dimensions, perimeters, or drawing references, as stated in the schedule.

PSG 8.1.1.3 Separate items will be scheduled

a) for each class of finish required on the formed concrete;

c) for each inclination of each type of structural element , such as walls and beams, and for different prop heights for beams and slabs, and for formwork to curved 1;single and double curvature), curved in plan only, arched, domical, specially moulded, and other types of work;

d) for depths of openings required in the formed concrete, as follows:

1. Not exceeding 0,5 m,
2. exceeding 0,s m but not exceeding 1,O m,
3. cxceeding 1,0 m but not exceeding 1,s m,
4. exceeding 1,s m but not exceeding 2.0 m,
5. exceeding 2.0 m, measured perpendicular to the surface and

e) for large and small voids classified as follows:

PSG 8.1.2 REINFORCEMENT

Steel for normal reinforced concrete will be measured net by mass of all bars, including supporting steel detailed on the reinforcing schedules nominal mass per unit length. No allowance will be made f3r cutting, waste, spacer devices (materials other than steel bars), or binding wire.

Separate items will be scheduled for:

a) Each steel section where rails and other steel sections are used; and

b) steel to be fixed in different parts of the work where this could materially influence the pricing of the work.

Steel reinforcement for precast concrete units will not be measured unless so scheduled (see 8.6).

Welded mesh will be measured by area as shown on the drawings, no allowance being made for cutting, waste, laps, or deductions for end cover.

The areas measured will be those of the concrete floor or slab reinforced by means of mesh. In the case of continuous units partly reinforced by mesh, the area will be computed from the outside dimensions of the area covered by mesh regardless of whether additional reinforcing steel is present in the same area.

Steel off cuts resulting from the cutting and bending of reinforcement in accordance with the bending schedule shall be deemed to be the property of the Contractor.

PSG 8.1.3 Concrete

a) Concrete will be measured net to the dimensions shown on the drawings or to the dimensions cast, whichever are the smaller. Structural elements that are undersized will be measured for payment only if they are accepted by the Engineer.

b) No allowance will be made for concrete required to make up

overbreak in soft excavation, but payment will be made for additional concrete or formwork, ordered in writing by the Engineer to replace unsuitable material or overbreak in hard rock or in intermediate excavation (see (d) below).

c) Sub foundation carpets and blinding layers will be measured to the plan size of the concrete structure resting on the carpet, or the plan size of the excavation where additional excavation is provided to facilitate erection of forms. Where the concrete is scheduled by volume it will be measured on the mean thickness a cast , provided that the Engineer is satisfied that the excavation has not a t any point been taken deeper or wider than necessary (see (b) above).

d) Where concrete is placed directly against the sides or bottoms of excavations in hard rock or in intermediate excavation, an item may be included in the schedule of quantities for any additional concrete placed in overbreak. Such additional concrete will be measured on the basis of the superficial area of the sides or bottom, or both, as applicable, of the theoretical net excavation in rock that is over broken and in contact with the concrete.

SABS 1200 GA 1982: CONCRETE (SMALL WORKS)

PSGA 1 SCOPE

This specification covers the requirements for concrete (plain and reinforced) for small works associated with pipelines, roads, railways , pump stations , etc It covers the basic materials, the plant did formwork required, the quality , manufacture, arid curing of concrete , tolerances in workmanship, testing , and the methods by which the finished structure is to be measured for the purposes of payment.

PSGA 3 MATERIALS

PSGA APPROVAL OF MATERIALS.

The Contractor shall supply in good time to the Engineer for his approval, samples of the aggregates (and, if so ordered, of the water) that: he proposes to use for the concrete, and shall furnish evidence that the water and aggregates comply with the requirements of 3.3 and 3.4.

Evidence shall be in the form of either

a) a statement from an approved laboratory of the results of tests ,
or
b) an authoritative report or record of previous experience.

PSGA 3.2 CEMENT

PSGA 3.2.1 Applicable Specifications.

Cement and blends of Portland cement and milled granulated blastfurnace slag (see SABS 626) shall be of the type scheduled or stated on the drawings, and shall comply with the relevant requirements of the following specifications :

SABS 471	Portland cement (ordinary, rapid-hardening, and sulphate - resisting)
SARS 626	Portland blastfurnace cement
SAUS E31	Portland cement 15 and rapid-hardening portland cement 15

PSGA 3.2.2 Storage of Cement.

Separate storage facilities shall be provided on the site for each type of cement used.

Cement that is stored on site shall be kept under cover that provides proper protection against moisture and other factors that may promote deterioration.

PSGA 3.3 WATER.

Water shall be clean and free from injurious amounts of acids, alkalis, organic matter, and other substances that may impair the strength or durability of concrete.

PSGA 3.4 AGGREGATES

PSGA 3.4.1 Applicable Specification.

Both the coarse aggregate (stone) and the fine aggregate (sand) shall comply with the relevant requirements of SABS 1083.

PSGA 3.4.2 Use of Plums.

Where plums are required to be used, or are permitted, they shall

a) be hard, clean stone of mass 15-55 kg;
b) constitute not more than 20% of the volume of the Concrete;
c) have no adhering film or coating;
d) have no dimension greater than 300 rnm or one-third of the smallest dimension of the concrete member, whichever is less
e) each be surrounded by concrete of depth at least 80 mm; and
f) have an aggregate crushing value at least equal to that specified for coarse aggregate in SABS 1083.

PSGA 3.4.3 Storage of Aggregates

Aggregates of different nominal sizes shall be stored separately and in such a way that segregation is minimized. Intermixing of different materials and contamination by foreign matter shall be avoided.

PSGA 3.5 REINFORCEMEN

Reinforcing bars shall comply with the relevant requirements of SABS 920.

Welded steel fabric shall comply with the relevant requirements of SABS 1024.

Steel shall be as stacked off the ground as to prevent distortion, and shall be protected from aggressive environments and contamination.

PSGA 3.6 STORAGE CAPACITY

The storage capacity provided and the amount of material stored (whether cement, aggregates, steel, or water) shall be sufficient to ensure that no interruption to the progress of the work is occasioned by lack of materials.

PSGA 3.7 DETERIORATED MATERIAL.

Material that has deteriorated, or that has been contaminated or otherwise damaged, shall not be used in concrete. Such material shall be removed from the site without delay.

PSGA 4 PLANT

PSGA 4.1 GENERAL.

All plant shall be maintained in good working order.

PSGA 4.2 MIXING PLANT.

The type and capacity of mixing machines shall be such that the rate of output of concrete is suitable for the rat e of concreting. Each machine shall be capable of producing a uniform distribution of the ingredients throughout the batch and shall comply with the specification to which the manufacturer claims it has been manufactured. Worn or bent blades and paddles shall be replaced. The inner surfaces of the mixer shall be clean and free from hardened concrete.

PSGA 4.3 VIBRATORS.

Vibrations shall be capable of fully compacting each layer of concrete where compaction by vibration is required (see 5 . 4 . 6 . 3) . At least one standby vibration shall be a available for every three (or smaller number o f) vibrators necessary to maintain the rate of placing.

PSGA 4.4 FORMWORK

PSGA 4.4.1 Design.

Formwork shall be so designed and constructed that the concrete can be properly placed and compacted and that, subject to the tolerances specified in 6. 2 - 6. 4 inclusive, the required shapes, finish, positions, levels, and dimensions shown on the drawings are maintained.

The formwork and joints shall be capable of resisting the dead Load, including the pressure exerted by the wet concrete, wind forces, and all other superimposed loads and forces.

PSGA 4.4.2 Finish.

The quality of the finished surface of the concrete shall be as scheduled or shown on the drawings or as required in terms of the project specification (tee 5.2.1).

PSGA 4.4.3 Ties.

The types of ties used shall he such that the required finish is achieved and will not be marred by subsequent corrosion of the ties.

PSGA 5 CONSTRUCTION

PSGA 5.1 REINFORCEMENT

PSGA 5.1.1 Bending

Reinforcing bars shall be befit to the dimensions shown on the drawings and in accordance with SABS 8 2.

All bars shall be bent cold and bending shall be done slowly, a steady, even pressure being used without jerk or impact.

PSGA 5.1.2. Fixing

Steel shall, at the time of the placing of the concrete, be free from loosed or powdery rust, scale, oil, and other coatings that may reduce the bond between steel and surrounding concrete, affect the durability of the concrete, or initiate corrosion of the reinforcement. If any substance other than water is used for lubricating the Formwork, every precaution shall be taken to avoid contamination of the reinforcement by such substance.

Reinforcement shall be positioned as shown on the drawings arid maintained in position. It shall be secured against displacement by tying at intersections with annealed wire of nominal diameter 1,6 mm or 1,25 mm or by the use of acceptable clip or, if permitted by tile Engineer, by welding. Reinforcement shall be supported in its correct position by means of hangers or saddles, and aligned by means of chairs and spacers of approved design.

Supporting steel to approved design will be added to the reinforcing schedule by the Engineer. Other supporting materials shall be subject to prior approval.

PSGA 6 TOLERANCES

PSGA 6.1 BASIS OF MEASUREMENT

PSGA 6.1.1 General.

Permissible deviations will apply in the case of linear dimensions, position, and level. The Contractor shall construct each of the various parts of the Works within the limit of the applicable permissible deviations set out in 6.4 for Degree of Accuracy III, unless some other degree of accuracy is required in terms of the project specification or is shown on the drawings.

PSGA 6.1.2 Methods of Measurement of Deviations.

Certain deviations will be measured as set out below:

a) Any deviation from flatness of a plane surface will be measured as the maximum deviation of the surface from any straight line of length 3 m joining two points on the surface, determined by means of a straight-edge the ends of which are supported on identical blocks of suitable thickness placed one over each of the points.

b) Any abrupt change in a continuous Surface, including a local depression or peak in a floor or wall, and any abrupt change caused by a joint. In formwork will be measured as specified in (a) above.

c) Out-of-squareness of a corner or an opening or an element such as a column will be measured by taking the longer of two adjacent sides as the base line, and determining any departure from the perpendicular of the side at either end of this base line.

PSGA 7 TESTS

PSGA 7.1 FACILITIES AND FREQUENCY OF SAMPLING

PSGA 7.1.1 Facilities.

The Engineer shall have free access to the work for taking samples and carrying out tests.

The Contractor shall render any assistance necessary. If so required, the Contractor shall provide storage and protection for such samples on the site.

In addition, the Contractor shall provide slump cones and the moulds required for compressive strength testing in accordance with SABS Method 863 in sufficient quantities to enable the frequency of sampling and testing required in terms of 7.1.2 and 7.2 to be achieved.

PSGA 7.1.2 Frequency of Sampling

Subject to the requirements of 7.1.2.3, while concrete of a particular grade and in sufficient quantity is being placed under the same conditions, sets of samples (each sample (see 2.3) being sufficient for 3 cubes, beams, cylinders, or prisms, as relevant) shall be taken until 30 valid test results have been obtained. The sets of samples shall be taken in accordance with SABS Method 861, for example, as close as is practicable to the start of placing and at appropriate intervals after that, or from one particular batch and then from subsequent batches chosen at appropriate intervals.

PSGA 7.1.3 Frequency of sampling shall, with due regard to the importance of the work and the eventual assessment of test results, be programmed oil the basis of considerations such as whether a test pertains to a particular section of work only or to the overall quality of concrete in the structure.

PSGA 7.1.4 Only one set of samples shall be drawn from any one batch of concrete, and except where otherwise ordered, no sample shall be taken of any grade until at least 3 batches of such grade have been mixed and discharged.

PSGA 7.2 TESTING

PSGA 7.2.1 General

All testing shall be carried out in accordance with the methods referred to in the specification or in accordance with such other methods as are specified in the project specification.

PSGA 7.2.1 Laboratory Testing

Laboratory testing shall be carried out by a recognized testing institution or an approved laboratory or firm approved by the Engineer.

PSGA 7.2.3 Early –Strength Testing

Whereas the criteria for concrete strength in the specification are based on samples tested at the age of 28 d only, any plan for early-strength testing shall be as agreed between the Contractor and the Engineer. Early-strength test results may be used for early remedial measures such as the changing of the mix design, if necessary, but shall not be used for assessment of strength in terms of 7.3.

PSGA 7.3 ACCEPTANCE CRTERIA FOR STRENGTH CONCRETE

If any valid test result for a specific grade of concrete is more than 3 MPa below the specified strength, the concrete yielding such result will be deemed not t o comply with the requirements of the specification. If an examination satisfies the Engineer that the structural adequacy and durability of the part of the structure in which the concrete has been used is not impaired, the concrete shall be accepted and the mix design and other factors influencing the quality shall be reviewed in order to ensure that further concrete cast will be of acceptable quality

PSGA 8 MEASUREI4EEIT AND PAYMENT'

PSGA 8.1 MEASUREMENT AND RATES

PSGA 8.1.1 Formwork

PSGA 8.1.1.1 Formwork, other than formwork covered by 8.1.1.2 and 8.1.4, will be measured as the net area of the face of the concrete to be supported during the deposition of concrete. No deduction will be made for

fillets and splays of size up to 50 mm x 50 mm or for openings of diameter up to 0,7 m or of area up to 0.5 m2.

PSGA 8.1.1.2 Formwork in continuous lengths of narrow widths and of fillets or splays over 20 mm x 20 mm will measured by length, the width or range of widths being stated in the schedule.

Boxing-out, the forming of holes, and other such operations will be measured by number, basic dimensions, perimeters, or drawing references, as stated in the schedule.

PSGA 8.1.1.4 The unit rate shall cover the cost of all parts of formwork in contact with the concrete, and the necessary bearers, struts , and other supports , plus the labour and plant necessary to erect and strike such formwork.

PSGA 8.1.2 Reinforcement

Steel for normal reinforced concrete will be measured net by mass of all bars, including supporting steel detailed on the reinforcing schedules. The mass will be computed from the nominal bar size and nominal mass per unit length. No allowance will be made for cutting, waste, spacer devices (materials other than steel bras), or binding wire.

Steel reinforcement for precast concrete units will not be measured unless so scheduled (see 8.6).

Welded mesh will be measured by area as shown on the drawings, no allowance being made for cutting, waste, laps, or deductions for end cover.

The areas measured will be those of the concrete floor or slab being reinforced by means of mesh. In the case of continuous units partly reinforced by mesh, the area will be computed from the outside dimensions of the area covered by mesh regardless of whether or not additional reinforcing steel is present in the same area.

Steel off cuts resulting from the cutting and bending of reinforcement in accordance with the bending schedules shall be deemed to be the property of the Contractor.

PSGA 8.1.3 Concrete

a) Concrete will be measured net to the dimensions shown on the drawings or to the dimensions cast , whichever are the smaller. Structural elements that are undersized will be measured for payment only if they are accepted by the Engineer.

b) No allowance will be made for concrete required to make up overbreak in soft excavation, but payment will be made for additional concrete or formwork, or both, ordered in writing by the Engineer to replace unsuitable material or overbreak in hard rock or in intermediate excavation.

c) Sub foundation carpets and blinding layers will be measured to the plan size of the concrete structure resting on the carpet. thickness as cast provided that the Engineer is satisfied that the excavation has not at any point been taken deeper or wider than necessary (see (b) above).

d) Where, in terms of (b) above, concrete is ordered to be placed directly against the sides or bottoms of excavations in hard rock or in intermediate excavation, an item may be included in the schedule of quantities for any additional concrete placed in overbreak. Such additional concrete will be measured on the basis of the superficial area of the sides or bottom, or both, as applicable, of the theoretical net excavation in rock that is over broken and in contact with the concrete.

Separate items will be scheduled, as applicable, for each grade of concrete, and for each unit of the works or each element of the structure, and for each type of cement. Except as provided for in 8.1.4, separate items will also be scheduled for different conditions (of placing concrete, for small quantities (each less than 0,5 m3 of formed concrete) , and for different surface finishes (other than striking – off and levelling) such as wood-floated or steel - floated finishes , .and granolithic or mortar screeds.

a) The unit rates shall cover the cost of the design of the mix in the case of strength concrete, the provision of concrete (made with ordinary portland cement unless otherwise scheduled),

mixing, testing, placing, compacting, the forming of stop-ends and unforeseen construction joints , striking - off or levelling as applicable, and curing and repairing where necessary.

b) Floor slabs, whether placed on sub-foundation carpets or directly on the prepared ground surface, will be measured to the net thickness dimensioned on the drawings.

c) Concrete in a column supporting a reinforced concrete beam or slab structure will be measured between the top surface of the foundation, beam, or s l a b on which the foot of the column is standing and the underside of the beam or slab supported by the column.

e) No deduction or addition will be made for nosings, bolt-holes, chamfers or splays of size up to 50 mm x 50 mm, grooves or chases not exceeding 0,015 m³ each in volume, or holding-down bolts , rails, steel sections, and reinforcement cast in the concrete.

PSGA Concrete Complete with Formwork

Separate items may be scheduled for concrete complete with formwork for each prescribed mix or for structural units of similar size and shape, or for both.
The unit rates shall cover the cost of the provision of concrete (made with ordinary portland cement unless otherwise scheduled), mixing, testing, placing, compacting, the forming of stop-ends and unforeseen construction joints, striking - off or levelling as applicable, and curing and repairing where necessary, together with the cost of all parts of formwork in contact with the concrete aid the necessary bearers, struts , and other supports, plus the layout and plant necessary to erect and strike such formwork.

SABS 1200 GB 1984: CONCRETE (ORDINARY BUILDINGS)

PSGB 1 SCOPE

This specification covers concrete, formwork, reinforcement, etc., for foundations, structures and wall panels of ordinary buildings of floor area up to about 2 000 m² and having formed concrete surfaces that are normally to be plastered or painted if not otherwise hidden from view.

The specification covers construction work that is intended to be controlled by means of a contract drawn up in terms of either:

a) the architects' Model Form of Agreement') (the contract making no provision for the inclusion of a project specification); or

b) conventional conditions of contract for civil engineering work

PSGB 3 MATERIALS

PSGB 3.1 Approval of materials.

The Contractor shall supply in good time to the Engineer, for his approval, samples of the aggregates (and, if so ordered by the Engineer, samples of the water) that he proposes to use for the concrete and shall furnish evidence that the water and aggregates comply with the requirements of 3.3 and 3.4.1, respectively.

Evidence shall be in the form of either:

a) a statement from an approved laboratory of the results of tests, or
b) an authoritative report or record of previous experience.

PSGB 3.2 CEMENT

PSGB 3.2.1 Applicable Specifications.

Subject to the provisions of 3.2.2, cement and blends of Portland cement and milled granulated blastfurnace slag (see SABS 626) shall comply with the relevant requirements of the following specifications:

BS 1370 Low heat Portland cement
SABS 471 Portland cement (ordinary, rapid-hardening and sulphate-resisting)
SABS 626 Portland blastfurnace cement
SABS 831 Portland cement 15 and rapid-hardening. Portland cements 15.

PSGB 3.2.2 Alternative Types of Cement.

Any type of cement other than those referred to in 3.2.1 shall be used only when specifically authorized by the Engineer. (See also 8.2.5.)

PSGB 3.2.3 Storage of Cement.

Cement that is stored on the Site shall be kept under cover that provides proper protection against moisture and other factors that may promote deterioration.
Storage of cement in bulk in weatherproof silos or similar containers will be permitted provided that the cement drawn for use is measured by mass and not by volume.

PSGB 3.2.4 WATER

Water shall be clean and free from injurious amounts of acids, alkalis, organic matter and other substances that may impair the strength or durability of concrete.

PSGB 3.4 AGGREGATES

PSGB 3.4.1 Stone and Sand

Stone and sand for coarse aggregate and fine aggregate shall comply with the relevant requirements of SABS 1083.

PSGB 3.4.2 Clinker for Breeze Concrete and No-fines Concrete.

Clinker for breeze concrete and for no-fines concrete shall be clean, dry furnace clinker that complies with the applicable requirements of SABS 794.

PSGB 3.4.3 Storage of Aggregates

Aggregates of different types and different nominal sizes shall be stored separately.

PSGB 3.5 ADMIXTURES.

Admixtures shall not be used in any concrete mix without the approval of the Engineer who may require tests to be carried out before admixtures are used.

PSGB 3.6 REINFORCEMENT.

Reinforcing bars shall comply with the relevant requirements of SABS 920. Welded steel fabric shall comply with the relevant requirements of SABS 1024. Steel shall be as stacked off the ground as to prevent distortion and shall be protected from aggressive environments and from contamination.

PSGB 4 PLANT

PSGB 4.1 GENERAL

The' Contractor shall provide everything necessary for the proper execution of the Works in terms of the conditions of contract.

PSGB 4.2 FORMWORK.

Formwork shall be so designed and constructed that the concrete can be properly placed and compacted and that, subject to the tolerances specified in 6.2, the required shapes, finishes, positions, levels and dimensions shown on the drawings are maintained.
The formwork and joints shall be capable of resisting the dead load, including the pressure exerted by the wet concrete, wind forces and all other superimposed loads and forces.

PSGB 5 CONSTRUCTION

PSGB 5.1 REINFORCEMENT

PSGB 5.1.1 Bending.

Reinforcing bars shall be bent in accordance with SABS 82

PSGB 5.1.2 Fixing.

Steel shall, at the time of the placing of the concrete, be free from loose or powdery rust, scale, oil and other coatings that may reduce the bond between steel and surrounding concrete, affect the durability of the concrete or initiate corrosion of the reinforcement. The position of reinforcement and the provision for cover of concrete over reinforcement shall be as shown on the drawings.
The reinforcement shall be secured against displacement by tying at intersections or by the use of clips that are acceptable to the Engineer. If any substance other than water is used for lubricating the formwork, every precaution shall be taken to avoid contamination of the reinforcement by such substance.

.**PSGB 5.2 FORMWORK**

Classification of finishes. Formwork will be classified in accordance with the surface condition required on the finished concrete. Such surface conditions are classified as follows and will be so scheduled:

a) A surface formed by any materials of the Contractor's choice, and having permissible deviations that are greater than those given for Degree of Accuracy III in Clause 6 when the Works are complete such a surface, if external, shall be below ground level or, if internal, shall not be exposed to view.

b) Normal. A surface condition such that no treatment of the surface of the concrete after the striking of the formwork will be required. The finish of the concrete need not be more accurate than Degree of Accuracy I11 as defined in terms of Clause 6.

c) Special. A special finish (including facings of brickwork or stonework) as stated on the drawings and as scheduled.

PSGB 5.2.2 Preparation of Formwork.

Forms shall be erected with joints tight enough to prevent leakage of cement mortar. Surfaces of forms (regardless of the material of which they are made) that are to be in contact with fresh (wet) concrete shall be treated with a coat of non-staining mineral oil or other approved material or, only in the case of timber forms, treated by thorough wetting of the surfaces with water, so as to ensure easy release and prevent adhesion of the formwork during stripping.

PSGB 5.2.3 Re-use of Formwork.

Before re-use, all formwork shall be reconditioned and all form surfaces that are to be in contact with the concrete shall be thoroughly cleaned.

PSGB 5.2.4.3 If the Contractor can prove to the satisfaction of the Engineer that a period shorter than the appropriate minimum given in Table 1 is sufficient to enable the concrete to comply with the requirement given in 5.2.4.1, the formwork may be removed after such shorter period.

PSGB 5.2.4.4 Formwork shall be removed carefully so that shock and damage to the concrete are avoided.

PSGB 5.2.4.5 Notwithstanding the provisions of 5.2.4.2 and 5.2.4.3, the Contractor shall be responsible for making good any damage to the concrete arising from the removal of formwork and its supports.

PSGB 5.3 CONCRETE

PSGB 5.3.1 Quality

PSGB 5.3.1.1 General.

The types of aggregates and cement shall not be altered during the currency of the contract without the prior approval of the Engineer.

PSGB 5.3.1.2 Consistency.

The slump, measured in accordance with SABS Method 862, shall be within the limits given in Table 2, appropriate to the type of construction, or within such other limits as are laid down

a) by the Engineer in respect of prescribed mix concrete;
b) by the Engineer after receipt of the Contractor's design for strength concrete, if any, in terms of 5.3.1.5.

PSGB 5.3.1.3 Workability.

The concrete shall be of such workability that it can be readily compacted into the corners of the formwork and around reinforcement without segregation of the materials or excessive bleeding of free water at the surface.

PSGB 5.3.1.4 Prescribed mix concrete.

The Engineer will be responsible for the design of prescribed mix concrete and for determining the proportions of the constituent materials. The Contractor shall provide, on the Site, concrete of the specified materials and in the proportions given by the Engineer.

The Engineer will state the following, on the drawings or in the schedule, in respect of prescribed mix concrete for each section of the work:

a) The maximum nominal size of coarse aggregate, in millimetres, and its proportion in the mix;
b) the proportion of fine aggregate in the mix;
c) the type and proportion of cement in the mix;
d) the slump, in millimetres, or the water/cement (w/c) ratio.

PSGB 5.3.1.5 Strength concrete.

The Contractor shall be responsible for the design of strength concrete, for the submission of test cubes to an approved laboratory and for the measurement of the constituent materials to produce concrete that complies with the requirements given by the Engineer on the drawings or described in the schedule.

The Engineer will state the following, on the drawings or in the schedule, in respect of strength concrete for each section of the work:

a) The grade of concrete and position on the Works;
b) the maximum nominal size of coarse aggregate, in millimetres.
The Engineer may also designate the type of cement to be used in each particular part of the work.

PSGB 5.3.2 Batching

PSGB 5.3.2.1 Cement.

The mass of cement supplied in a standard sack shall be assumed to be 50 kg. All cement taken from bulk storage containers and from partially used sacks shall be batched by mass to an accuracy of within 2% of the mass required.

PSGB 5.3.2.2 Water.

The amount of water measured shall be adjusted to allow for the moisture content of the aggregates.

PSGB 5.3.2.3 Aggregates.

If batching is by mass, the mass of the aggregate of each size shall be determined and a correction made for the moisture content of the aggregates.
If batching is by volume, the fine and the coarse aggregates shall be measured separately in suitable measuring boxes of known volume and of such capacity that the quantities of aggregates for each batch are suitable for direct transfer into the mixer. Bulking tests on the fine aggregate shall be conducted regularly in accordance with SABS Method 856 and the results used for adjustment of the batch volume of fine aggregate to give the true volume required.

The Engineer may require additional tests for bulking to be done after rain has fallen or if, in his opinion, any other cause of variation in the moisture content of the aggregate has arisen.

PSGB 5.3.3.3 Mixing

PSGB 3.3.1 Mixing at construction site.

The following requirements shall apply to the mixing of concrete at the construction site:

a) The sequence of charging the mixing plant shall have been approved before mixing commences and, unless otherwise directed by the Engineer, the approved sequence shall be maintained.
b) The total volume of material per batch shall not exceed the rated capacity of the mixer.
c) Before any concrete is mixed, the inner surfaces of the mixer shall be cleaned and all hardened concrete shall be removed. A slurry of cement, sand and water containing cement and sand in the ratio
1:2 and in sufficient quantity to cover the entire inside surface of the mixer shall be produced in the clean mixer and discharged immediately before the charging of the mixer with materials at the commencement of each concrete production run.
d) The period of mixing shall be measured from the time when all the dry materials are in the drum or pan and water has been added, until the commencement of discharge. The mixing period for each batch of
1,s m3 or less shall be at least 1,s min and at least 1 rnin for drum-type and pan-type mixers respectively, and shall be increased by 20 s and 15 s respectively for each additional cubic metre or part thereof. During this period, the drum or pan shall be rotated at the speed recommended by the manufacturer of the mixer. The maximum continuous mixing times at the recommended mixing speeds shall not exceed 10 min and 6 rnin per batch for drum-type and pan-type mixers respectively.
e) In the event of delay in the concreting operations, concrete may be retained in the mixer for a maximum period of 2 h provided that the slump is checked frequently and that only enough water to maintain the target slump is added to the mixer. During this period the mixer shall be restarted and run for about 2 min every 15 rnin . The Engineer may order that the period of 2 h be reduced if, in his opinion, the ambient temperature or any other factor will tend to produce early setting.

f) Discharge shall be so carried out that there is no segregation of the materials in the mix. The mixer shall be emptied completely before it is recharged. If the mixer has been out of use for longer than 30 min, it shall be thoroughly cleaned out, particular attention being paid to the removal of any build-up of materials in the drum, in the loader and around the blades or paddles.

PSGB 5.3.3.2 Ready-mixed concrete.

Where the production of concrete at a central concrete production facility other than on the Site is permitted in terms of the conditions of tender, and where the test results obtained by such a production facility as part of its quality control system and evaluated in terms of 7.3 are acceptable to the Engineer, the requirements of SABS 878 shall apply up to the point of delivery of the ready-mixed concrete. The placed concrete delivered from such a facility shall comply with 5.3.12, the concrete being sampled in accordance with the applicable requirements of 7.1 and test results evaluated in accordance with 7.3.

PSGB5.3.3.4 Breeze concrete.

Breeze concrete shall consist of 12 parts of clinker (see 3.4.2) and one part of cement, the fine fractions of the clinker being mixed with the cement first to make a mortar, and the coarse fractions then being added and thoroughly incorporated.

PSGB 5.3.3.4 No-fines concrete.

No-fines concrete shall be composed of single-sized coarse aggregate, cement and water. The cement and aggregate shall be mixed in an approved mechanical mixer with just enough water to form a smooth grout that will completely coat each particle of aggregate and will be fluid enough to flow together to form a fillet at each point of contact of aggregate particles. Not more than 20 e of water per 50 kg cement shall be used.

The aggregate, in addition to complying with the applicable requirements of SABS 1083 and SABS 794, shall be of nominal size not greater than 20% of the minimum thickness of no-fines concrete to be placed and shall be measured by volume in approved measuring boxes. The proportions of aggregate and cement shall be:

a) stone aggregate of nominal single size 19,0 mm, 9 parts : cement, 1 part; or
b) clinker aggregate, 6 parts : cement, 1 part.

Reinforcement, if any, shall be precoated with cement slurry which shall be allowed to dry before the concrete is placed.
No-fines concrete shall be placed within 30 min after mixing. It shall be so worked that it fills the space to be concreted and that adjacent aggregate particles are in contact with each other. No-fines concrete shall not be vibrated.
Removal of formwork for no-fines concrete shall comply with 5.2.4, but the minimum curing period shall be 2 d longer than that required at the applicable ambient temperature in terms of 5.3.8.

PSGB 5.3.4 Transportation.

Mixed concrete shall be discharged from the mixer and transported to its final position in such a manner that segregation, loss of ingredients and adulteration are prevented and that the mix is of the required workability at the point and time of placing.

PSGB 5.3.5 Placing (See also 5.3.9)

The Contractor shall give the Engineer at least 12 h notice of his intention to place concrete. The concrete shall be placed within 1 h of the time of its discharge from the mixer (or agitating truck or truck-mixer in the case of ready-mixed concrete). Concrete shall not be retempered, after discharge, by the addition of water or any other material. The forms to be filled shall be clean internally. All excavations and other surfaces of an absorbent nature, that are to come into contact with the concrete shall be dampened with water. There shall be no free water on the surfaces against which concrete is to be placed.

PSGB 5.3.5.2 Wherever possible, the concrete shall be deposited vertically into its final position to avoid segregation and displacement of reinforcement and other items that are to be embedded.

PSGB 5.3.5.3 Deposited concrete shall not be so worked (whether by means of vibrators or otherwise) as to cause it to flow laterally in such a way that segregation occurs. Where possible, the concrete shall be brought up in horizontal layers of compacted thickness not exceeding 450 mm and heaping shall be avoided. The appropriate requirements for forming joints given in 5.3.7.3 shall apply if the time between the depositions of successive layers is such that the concrete that has been placed has taken its initial set.

PSGB 5.3.4. Where a chute is used to convey the concrete, its slope shall be such as will not cause segregation, and a suitable spout or baffles shall be provided for the discharge of the concrete.

PSGB 5.3.5 Except when columns and the like are being cast and unless otherwise approved, concrete shall. not be allowed to fall freely through a height of more than 3 m . In the case of columns the formwork shall be filled slowly and special precautions shall be taken to avoid segregation and the formation of voids.

Concrete placing shall be suitably delayed at places (such as at the top of a column and at the junction of the web and the slab in a T-beam) where shrinkage resulting from bleeding, settlement and other causes may occur and the concrete at such places shall be reworked immediately before normal concrete placing is resumed.

PSGB 5.3.5.6 When closed circuits are being concreted, work shall commence at one or more points in the circuit and proceed in opposite directions at the same time so that, at completion of the circuit, the junction or junctions are formed with freshly placed concrete.

PSGB 5.3.5.7 During and after concreting under water, pumping or dewatering operations in the immediate vicinity shall be suspended should there be, in the opinion of the Engineer, any danger that such operations will disturb the freshly placed concrete before it has set and gained adequate strength.

PSGB 5.3.5.8 The placing of concrete by pumping in any section of the works shall be subject to the written approval of the Engineer. The Contractor shall furnish the Engineer with full details regarding the mix proportions of concrete that he intends to place by pumping.

PSGB 5.3.6 Compaction

PSGB 5.3.6.1 Hand-placed concrete (see Table 2) shall, during and immediately after placing, be fully compacted by spading, rodding, forking or other approved means. It shall be thoroughly worked against the formwork and around reinforcement and other embedded items without displacing them.

PSGB 5.3.6.2 The concrete shall be free from honeycombing and planes of weakness. Except as allowed in 5.3.5.3, successive layers of the same lift shall be thoroughly worked together. To achieve this, the compaction tool shall penetrate through the new layer to the lower layer which shall still be sufficiently plastic to permit interknitting.

PSGB 5.3.6.3 If plastic shrinkage cracks occur, the concrete, while still plastic and whether or not curing has commenced, shall be thoroughly recompacted and, thereafter, fully cured.

PSGB 5.3.7 Construction Joints

PSGB 5.3.7.1 Except as allowed in 5.3.7.2, concreting shall be carried out continuously up to the locations where joints are shown on the drawings or up to approved locations. Unless the Contractor is otherwise instructed by the Engineer or unless the joints are unforeseen joints, joints shall, subject to the provisions of 5.3.7.3, be constructed in accordance with the details shown on the drawings or given in the schedule.

PSGB 5.3.7.2 If, because of an emergency (such as a breakdown of the mixing plant or the occurrence of adverse weather), concreting has to be interrupted, concrete shall be finished off at the place of stoppage in the manner that will least impair the durability, appearance and proper functioning of the concrete. (Ordinary buildings)

PSGB 5.3.7.3 The method adopted for forming joints not covered by 5.3.7.1 and for forming unforeseen joints (see 2.3.3) shall be one of the following:

a) Construction joints formed when concrete is not more than 24 hrs old

The surface of the concrete shall be brushed with a steel wire brush before new mortar and concrete are placed as specified in (b) below.

b) Construction joints formed when concrete is more than 24 hrs but not

more than 3 days old. The surface of the concrete shall be sand-blasted or chipped with a light hammer, swept clean, and thoroughly- wetted and covered with a 10 mm thick layer of mortar composed of cement and sand mixed in the same ratio as the cement and sand in the concrete mixture. This mortar shall be freshly mixed and placed immediately before the new concrete is placed.

c) Construction joints formed when concrete is more than 3 days old but

not more than 7 (1 old. The procedure specified in (b) above shall be followed, except that the old surface shall be -prepare d and kept continuously wet for at least 24 h before the mortar and new concrete are placed.

d) Construction joints formed when Concrete is more than 7days. The surface to be bonded shall be blast-cleaned, chipped or hacked to expose coarse aggregate over the whole area. High pressure water jets may be used. Before fresh concrete is placed, the surface shall be washed to remove all dust and allowed to dry out. The surface shall then be treated with an approved wet-to-dry concrete adhesive in accordance with the manufacturer's instructions and the fresh concrete shall be placed while the adhesive is still tacky and in the condition stipulated by the manufacturer. Special attention shall be given to the compaction of the fresh concrete in the bond area.

e) Construction joints formed at tops of columns. The brushing or other treatment specified in (a) or (b) above, as applicable, shall be carried out before the steel reinforcement of any slab or floor to be cast on the columns is placed in position.

PSGB 5.3.8. Curing and Protection.

As soon as it is practicable, all concrete shall, subject to the provisions of 5.3.9.1, be protected from contamination and loss of moisture by one or more of the following methods:

a) Ponding the exposed surfaces by means of water where the ambient temperature is not likely to all below 5 °C;
b) covering the concrete with sand or with mats made of a moisture-retaining material, and keeping the covering continuously wet ;
c) continuously spraying the exposed surfaces with water;
d) covering the concrete with waterproof sheeting (e.g. plastics sheeting) firmly anchored at the edges;
e) the use of an approved curing compound applied in accordance ,with the manufacturer's instructions.

Whatever method of curing is adopted, its application shall not cause staining, contamination or marring of the surface of the concrete. Water used shall comply with the requirements of 3.3.

When the ambient temperature is 5 °C and higher, the curing period shall be at least 5 d for concrete made with Portland cement and at least 2 d for concrete made with rapid-hardening Portland cement. When the ambient temperature is below 5 °C, the curing periods shall be extended by 72 h and 36 h respectively.

PSGB 5.3.9. Adverse Weather Conditions (see 2.2(a))

PSGB 5.3.9.1 Under adverse cold weather conditions, effective measures shall be taken to ensure that the temperature of the concrete, from the time of placing until it has hardened (i.e. about 24 h), is maintained at not less than 5 °C. If the ambient temperature is below 5 °C or is expected to fall below 5 °C during the curing period (see 5.3.81, water shall not be used for curing. All surfaces shall be protected from ice or frost damage and concrete that has been damaged by frost shall be removed and replaced by the contractor at his own expense.

PSGB 5.3.9.2 Under adverse hot weather conditions, the Contractor shall take all reasonable steps to reduce to a minimum the placing temperature of the concrete.

PSGB 5.3.9.3 Concrete shall not be placed under exposed conditions during periods of heavy or prolonged rain fall.

PSGB 5.3.10 **Concrete Surfaces**

PSGB 5.3.10.1 Exposed surfaces of concrete not finished against forms (such as horizontal and slightly sloping surfaces) shall be brought up to a plane, uniform surface with suitable screed boards.

PSGB 5.3.10.2 Except as allowed in terms of 5.3.12.1, finished concrete shall have a neat, smooth, even and uniform finish free from any honeycombing.

PSGB 5.3.10.3 Where special facework is required to be added to vertical and battered surfaces of cured concrete, the surfaces and the manner of fixing the facework shall comply with the relevant requirements given on the drawings or in the schedule or in SABS 1200 GE, as applicable.

PSGB 5.3.11 **Grouting.**

The edges of mortar grout shall be trimmed at an angle of 45 outward from the bottom edges of each baseplate or bedplate, and the trimmed edge steel-floated to a neat finish.

PSGB 5.3.12 **Defects**

PSGB 5.3.12.1 The concrete shall be homogeneous and, except for superficial honeycombing acceptable t o the Engineer, surfaces to be plastered shall be free from honeycombing, interstices and planes of weakness.

If, after the removal of the forms, the concrete shows any defect, the Contractor shall immediately report such defect to the Engineer.

PSGB 5.3.12.2 The Engineer will either specify the extent and method of repair or order the demolition and reconstruction of the whole of the defective work to the extent that he considers necessary.

PSGB 5.3.13 **Records.**

a) The date on which each section was concreted, the time taken to place the concrete and the position of the section in the Works;
b) the daily weather conditions;
c) the nature of samples, the dates on which they were taken identification by which the results of tests on such samples may be correlated with the sections of work to which they pertain.

PSGB 6 **TOLERANCES**

PSGB 6.1 **METHODS OF MEASUREMENT OF DEVIATIONS.**

Deviations will be measured as set out below:

a) Any deviation from flatness of a plane surface or any abrupt change in a continuous surface will be measured as the maximum deviation of the surface from any straight line of length 3 m

joining two points on the surface, determined by means of a straight-edge, the ends of which are supported on identical blocks of suitable thickness placed over each of the points.

b) Out-of-squareness of a corner or of an opening or of an element such as a column will be measured by caking the longer of two adjacent sides as the base line, and determining any departure from the perpendicular of the side

PSGB 7.3 TESTING

PSGB 7.3 ACCEPTANCE CRITERIA FOR STRENGTH CONCIUWE

PSGB 7.3.1 Strength more than 3 MPa below Specified Strength.

Should any ,valid test result obtained on concrete of a specific grade show that the strength is more than 3 MPa below the specified strength, the concrete yielding such result will be deemed not to satisfy the requirements of the specification. should an examination satisfy the Engineer that the structural adequacy and durability of the part of the structure in which the concrete has been used is not impaired, the concrete shall be accepted and the mix design and other factors influencing the quality shall be reviewed in order to ensure that further concrete cast will be of a quality acceptable to the Engineer.

PSGB 7.3.2 Criteria for Three Valid Test Results.

The following criteria shall apply where three consecutive valid test results are obtained:

a) The average of any three consecutive valid test results obtained on concrete of a specific grade shall exceed the specified strength by at least 2 MPa.

b) If the criterion given in (a) above is not met but the said average is at least equal to the specified strength, the concrete cast shall be accepted but the mix design and standard of control shall be reviewed and adjusted as necessary.

PSGB 8 MEASUREMENT AND PAYMENT

NOTE: This clause shall not apply to a contract that is subject to the architects' Model Form of agreement). In such a contract, the terms of The Standard System of Measuring Builders' h.ork3) shall apply to measurement and payment.

PSGB 8 PRINCIPLES

PSGB 8.1 In-situ Concrete.

PSGB 8.1.1 In-situ concrete will generally be measured by volume but may be measured by area if the thickness is stated. No deductions in the measurement of concrete will be made for small cavities, chamfers, nosings, bolt holes, rails, joists or reinforcement cast in.

Except for screeding as specified in 5.3.10.1, work done on horizontal and slightly sloping surfaces of wet and setting concrete to produce a finished surface as specified in 5.3.10.2 will be measured as a separate item, the type of floating being stated.

PSGB 8.1.2 Precast and Prestressed Concrete.

Except where separately scheduled or where SABS 1200 GE (with or without SABS 1200 GP) forms part of the contract, precast and prestressed concrete units will be measured in terms of this clause by number, volume, area or length, as most appropriate, depending on the shape, size, means of manufacture and number of repetitions. Supply and erection or fixing may be scheduled separately, as shown in 8.2.5.1 (f) (1) and (2), or together. In the latter case the unit rate shall cover the cost of both operations.

PSGB 8.1.3 Formwork.

Formwork will be measured separately

PSGB 81.4 **Special Finishes.**

Special finishes on vertical and battered faces that are created by means of special formwork including skins of superior quality concrete or brickwork or stonework, as specified in 5.2. l(c), will be measured under formwork, the average, thickness of the finish or the superior skin being stated, where applicable. (See 8.2.7 for special facework that is added to a surface as specified in 5.3.10.3 after concrete has been cast.)

PSGB 8.1.5 **Reinforcing Steel.**

Reinforcing steel will generally be scheduled as "supply, cut, bend, and fix into position", but separate items may be scheduled as "supply", "cut and bend", and "fix into position".

PSGB 8.2 **SCHDULED ITEMS**

PSGB 8.2.1 **Formwork.**

Formwork will be scheduled as:

a) Rough.....Unit: m²
b) Normal …….....Unit: m²
c) Special (the finish required will be described).....Unit: m²

The positions or elements in the Works will be stated for each quality of finish scheduled and, for each of (b) and (c) above, separate items will be scheduled for different angles of inclination of formwork as given below:

The areas measured for (a)-(c) above will, in each case be the net area of the face of concrete to be supported during the deposition of concrete. fillets and splays of size up to 50 mm x 50 nun or for openings of diameter up to 0,7 m or of area up to 0,5 m2.

The unit rates for (a)-(c) above shall cover the cost of all parts of formwork in contact with the concrete, including forming fillets or splays of size up to 20 mm x 20 mm, and the necessary bearers, struts and other supports plus the labour and plant necessary to erect and strike such formwork.

Where a special finish is scheduled, payment will be due when the special finish as described in the schedule has been achieved.

PSGB 8.2.2 Narrow Widths (the constant width, if in excess of 300 mm, or the range of widths, if up to 300 mm, or width and depth in the case of grooves, will be stated)
.....m

Fillets or splays of size over 20 mm x 20 mm will be measured under this item.

The unit rates shall cover the cost of narrow widths of formwork (including forming fillet or splays of size up to 20 mm x 20 mm) in contact with the concrete, and the necessary bearers, struts and other supports plus the labour and plant necessary to erect and strike such narrow widths of formwork, fillets and splays.

PSGB 8.2.3 Box-out Holes/Form Voids (Basic dimensions or perimeters or drawing references will be stated and, for each of (a)-(d) below, an item will be scheduled for the depths given below.)

a) Small, circular, of diameter up to 0,35 m.....No
b) Small, other than circular, of area up to 0,lm².....No
c) Large, circular, of diameter over 0,35 m and up to 0,7 m.....No
d) Large, other than circular, of area over 0, l ml and up to 0,s m2……..No

The unit rates for (a)-(d) above shall cover the cost of all material, labour, plant and operations necessary to box-out holes or form voids in the concrete, including the cost of delays to the main formwork program, and wastages in or cutting of the main formwork, or both.

PSGB 8.2.4 Reinforcement

a) Steel bars (Type of steel (mild, high-tensile or other) and diameters stated) ..... t

b) Steel sections (sizes stated) .....t

The mass of round and square steel bars of each diameter or side, as relevant, will be scheduled separately.

In the case of (a) and (b) above the mass measured for payment will be the net mass of all bars, including supporting steel detailed on the reinforcing schedules. The mass will be computed from the scheduled length and the nominal mass per unit length for each nominal bar size. No allowance will be made for cutting, waste, spacer devices (i.e. materials other than steel bars) or binding wire.

Separate items will be scheduled for

1) steel to be fixed in different parts of the Works 'where this could materially influence the pricing of the work; and
2) rails and other steel sections used as reinforcement.

Steel reinforcement for precast and prestressed concrete units will not be measured unless so scheduled.

Steel off cuts resulting from cutting and bending reinforcement in accordance with the bending schedule shall be deemed to be the property of the Contractor.

The unit rates for (a) and (b) above shall cover the cost of supplying, cutting, bending, placing in position and fixing of the reinforcing and supporting steel scheduled, and the cost of providing all spacer devices and binding wire, as well as the cost of tests in terms of SABS 920.

c) High-tensile welded mesh (Type reference stated) ..... T

The area measured will be that shown on the drawings, no allowance being made for cutting, waste, laps or deductions for end cover. The areas measured will be those of the concrete floor or slab reinforced by means of mesh. In the case of continuous units partially reinforced by mesh, the area will be computed from the outside dimensions of the area covered by mesh, regardless of the presence or otherwise of additional reinforcing steel across the same area.

The unit rates shall cover the cost of supplying, cutting and placing of mesh, the cost of all waste owing to laps, and the cost of providing all spacer devices.

PSGB 8.2.5 Concrete

PSGB 8.2.5.1 Items

a) Prescribed mix concrete ..... M^3

The proportions and the positions or elements in the Works will be stated.

b) Strength concrete ..... M^3

The grade and the positions or elements in the works will be stated. Except where ordinary Portland cement is required, the type of cement will be stated.

c) Concrete in small quantities, each less than 0,5 m3 of formed concrete ..... M³

The grade and the positions or elements in the Works will be stated, grouped as to types or scheduled individually.

d) Subfoundation carpet or blinding layer in .... Concrete.

Either of the following will be stated:

Minimum thickness and proportions or grade .....m²
Proportions or grade .....m³

e) Concrete abutting against hard rock faces or intermediate excavation, including any necessary filling to irregularities (no thickness will be stated) (Provisional)..... .....m²

Where concrete is to be placed directly against the sides or bottoms or both of excavations in hard rock or in intermediate excavation, an item may be included in the schedule for any additional concrete Dlaced in overbreak.

f) Provision and erection of precast (or prestressed) units

1) Provision of precast units (or prestressed units, as applicable)

The dimensions of individual units, and whether reinforcement including prestressing is included or measured separately, will be stated.

Separate items will be scheduled for different qualities of concrete, different types and sizes of units, and small units of volume of formed concrete not exceeding 0,s m3.

2) .Erection of precast units (or prestressed units, as applicable..... Unit: t or No.

Details of jointing, where applicable will be stated. Separate items will be scheduled for different positions of units for erection purposes.

PSGB 8.2.5.2 Measurement

a) Except for items scheduled under 8.2.5.1(d) and (e) the volume will be calculated from the dimensions shown on the drawings or from the dimensions cast (subject to no deductions where cast concrete is within the tolerances specified in 6.21, whichever is the smaller.

Structural elements that are undersized w ill only be measured for payment if they are accepted by the Engineer.

b) Concrete in a column supporting a reinforced concrete beam or slab structure will be measured between the top surface of the foundation, beam or slab on which the foot of the column is standing and the underside of the beam or slab supported by the column.

c) No deduction or addition will be made for nosings, bolt holes, chamfers or splays of size up to 50 mm x 50 mm, grooves or chases each of volume not exceeding 0,015 m3, or holding-down bolts , rails , steel sections and reinforcement cast in the concrete.

d) Floor slabs, where placed on subfoundation carpets or directly on the prepared ground surface, will be measured to the net thickness dimensioned on the drawings.

e) No allowance will be made for concrete required to make up overbreak in soft excavation but payment, at the relevant rate for 8.2.5.1(a), (b) or (e), as applicable will be made f o r additional concrete or formwork ordered in writing by the Engineer to replace unsuitable material or overbreak in hard rock or in intermediate excavation (see 8.2.5.l (e)).

f) Items scheduled under 8.2.5.1(d) will be measured to the plan size of the concrete structure resting on the carpet, or the plan size of the excavation where additional excavation is provided to facilitate erection of forms (subject to the width of the additional excavation being approved by the Engineer as reasonable). Where the concrete is scheduled by volume it will be

measured on the mean thickness as cast, provided that the Engineer is satisfied that the excavation has not at any point been taken deeper or wider has necessary (see (e) above).

9) Where an item is scheduled or ordered under 8.2.5.1(e), any additional concrete will be measured on the basis of the superficial area of the theoretical net excavation in hard rock or intermediate material that is overbroken and in contact with the concrete in the sides or bottom or both, as applicable.

PSGB 8.2.5.3 Unit rates.

Subject to the provisions of 8.1, the unit rates for 8.2.5.l (a)-(c) and (e) shall cover the cost of the design of the mix in the case of strength concrete, the provision of concrete (made with ordinary portland cement unless otherwise scheduled), mixing, testing, placing, compacting, the forming of unforeseen construction joints, striking off with screed boards as specified in 5.3.1, 0.1, and curing and repairing where necessary.

The unit rates for 8.2.5.1(d1 shall cover the cost of the provision of concrete (made with ordinary portland cement unless otherwise scheduled), mixing, testing, placing, compacting, the forming of unforeseen construction joints, striking-off with screed boards as specified in 5.3.10.1, and curing and repairing where necessary and, in addition, for items under
8.2.5.1(0), the cost of all waste concrete.

The unit rate for 8.2.5.1(f)(1) shall cover the cost of all labour, equipment, moulds, material (including facings) , reinforcement (including prestressing) and fixtures (except where reinforcement and fixtures are measured separately), mixing, placing, compacting and floating-off of concrete, and the cost of temporary stacking, curing and delivering the units t o and stacking them on the site.

The unit rate for 8.2.5.1(f) (2) shall cover the cost of removal of the units from temporary stacking and of all materials, plant and labour required for building units in or fixing them into position, including the cost of provision of hard standings, lifting gear and temporary scaffolding and supports necessary to keep the units stable until the permanent support system is able to stabilize the units.

PSGB 8.2.6 Unformed Concrete Surface Finishes

(As specified in 5.3.10.1, horizontal and slightly sloping:

a) Wood-floated finish ……..…….…….…Unit: m
b) Steel-floated finish ……..…….Unit: m
c) Power-floated finish ……..…….Unit: m
d) Other special finish (including granolithic) ..... Unit: m

The rates for (a)-(d) above shall cover the cost of producing the specified finish within the applicable tolerance specified in 6.2 and, in the case of (c), the provision and operation of the power-floating equipment. Payment will become due when the specified finish has been achieved.

PSGB 8.2.7 Special Facework Finishes..... Unit: m²

Facework treatment (and thickness, if applicable,) will be stated, and the surfaces t o be so treated will be identified.

Where special facework as specified in 5.3.10.3 is measured, no consequential reduction in the volume of concrete or in the area of formwork will be measured regardless of the nature of the treatment. No deductions will be made for small openings of diameter up to 0, 7 m or of area up to 0,s m². Facework in fillets and splays of all sizes and in narrow and constant widths (widths being stated) and in small quantities will be scheduled and measured separately.

The rate shall cover the cost of material, labour, plant and operations necessary t o provide the special facework finish to the main surface as specified in 5.3.10.3, including the cost of delays.

PSGB 8.2.8 Joints (Movement joints and any other designated joints)..... Unit: m

Designated joints only (see 2.3.3) will be measured. The length measured will be that show on the drawings or given in the schedule or approved in terms of 2.3.3.

The unit rate shall cover the cost of all materials and labour for the construction of each joint as scheduled or shown on the drawings or approved, including the cost of formwork, testing and making good.

PSGB 8.2.9 Grouting 3

a) Under bases (or beds)..... Unit: m
Grouting under structural steel column bases or members, or under pumps, motors or other machinery will be measured by the volume of grout (before the edges are trimmed a t 4S0 from the bottom edges of baseplates) necessary to fill the voids and pockets between the underside of the metalwork and the top of the concrete. No deduction will be made for bolts, packers and baseplate shear keys protruding into the grout space.
Formwork, if any, will be measured separately in terms of 8.2.1.

b) HD bolts, etc. (see 8.2.10) ..... Unit: t or No.

Except where provision is made under 8.2.3 for pockets for HD bolts, separate items will be scheduled for HD bolts of different diameters, lengths and types, and for bearings and miscellaneous metal work of different types. The quantity will be measured by the volume of grout necessary to fill the voids in the concrete. No deduction will be made for bolts and packers protruding into the grout space.

c) Unit rates. The unit rates for (a) and (b) above shall cover the cost of scabbling, cleaning and preparing the concrete surfaces, providing an approved grout, placing and ramming it solidly into all voids and pockets, and mitring the outside edges to a true wood-floated surface.

PSGB 8.2.10 Provide HD Bolts and Miscellaneous Metal Work ..... Unit: t

Whether HD bolts are to be supplied by the Contractor or by others will be stated. Separate items will be scheduled as specified in 8.2.9(b).

The unit rate shall cover the cost of supplying and delivering or taking delivery (as applicable), fixing or casting into concrete, and all cleaning, preparation and finishing, as applicable.

SABS 1200 H 1990 STRUCTURAL STEELWORKS

PSH 1 SCOPE

1.1 This specification covers structural steelwork generally structures, except cranes and road and rail bridges.

It includes certain sundry items such as stairs, ladders, handrailing, and open grid f1ooring.

NOTE: Should a specification be required for such sundry structural steel, refer to SABS 1200 HA.

The specification does not cover roof and side cladding (see SABS 1200 HB) or corrosion protection of structural steelwork (see SABS 1200 HC).

NOTE: The standards referred to in the specification are listed in Appendix A.

PSH 3 MATERIALS

PSH 3.1 STRUCTURAL STEEL

Subject to the provisions of 3.2, 3.3 and 3.4, steel used in the fabrication of structural steelwork shall comply with the requirements of SABS 1431 for the grade of steel specified in the project specification or stated in the drawings. Steel of commercial quality may be used in the fabrication of items such as stairs, ladders, handrails, open grid flooring and similar sundry steelwork items.

Unless

i) otherwise explicitly approved; or

ii) adequate resistance to brittle fracture can be demonstrated; or

iii) brittle fracture will not be a critical design consideration; the material of welded elements subject during erection to tensile stresses exceeding 15 % of the specified minimum yield stress of the steel , or subject in the completed structure to tensile stresses under any combination of forces shall comply with the following requirements:

a) The thickness of steels of Grades 300WA, 350WA and 450WA shall not exceed 40 mm

b) The thickness of steels of Grades 300WC, 300WDD, 350WC, 350WDD, 450WC and 450WDD shall not exceed the following values:

Grade	Plates		Sections, etc.
300WC	63 mm		50-mm
300WDD	63 mm	50 mm	
350WC	100 mm	40 mm	
350WDD	100 mm	40 mm	
450WC	100 mm	19 mm	
4 50WDD	40 mm	19 mm	

c) For thicknesses in excess of those specified in (a) and (b) above, the impact value applicable in the impact test shall be at least 27 J at 0 "C.

Steel section profiles shall comply with the requirements for dimensions and properties given in the South African Institute of Steel Construction's structural steel tables.

PSH 3.2 SPECIAL STEELS.

Steel of a type not covered by SABS 1431 and used in structural elements shall be such that it complies with the following requirements and with the applicable requirements of the project specification:

a) Unless otherwise specified, the yield stress shall not exceed 450 MPa;

b) the ratio of the tensile strength to the guaranteed yield strength, determined in accordance with SABS 1431, shall be at least 1,2:1,0;

c) the elongation (on a gauge length of 5,65 √Ao mm), determined in accordance with SABS 1431, shall be at least 15 % .

(Ao = cross-sectional area of tensile test specimen, mm²)

PSH 3.3 STEEL USED FOR COLD-FORMED SECTIONS.

All steel used in the manufacture of cold formed sections for use as structural members in building shall comply with 3.1 and, in addition, shall have a minimum yield stress of at least 200 MPa.

PAH 3.4 STRUCTURAL TUBULAR AND HOLLOW STEEL SECTIONS.

All steel used in the manufacture of hollow sections shall comply with the requirements of SABS 1431 or SABS 657:

Part I. Where so specified, special steels shall be used.

PSH 3.5 WELDING CONSUMABLES

Electrodes Welding electrodes shall comply with the applicable requirements of SABS 455 or such other standard as may be agreed upon by the Engineer and the Contractor.

PSH 3.5.2 Storage and Handling.

The storage and handling of all consumables shall be in accordance with requirements of BS 5135

PSH 3.5.3 Quality.

Welding consumables, in addition to complying with the requirements of 3.5.1 shall be such that they produce weld metal that, when tested in accordance with the applicable method given in BS 709, has a minimum yield stress and minimum tensile strength at least equal to those of the parent metal.

PSH 3.6 BOLTS, NUTS AND WASHERS

PSH 3.6.1 Bolts and Nuts [other than Friction- grip).

Bolts and nuts other than fitted bolts and other than bolts and nuts for friction -grip joints shall comply with the requirements of SABS 135, SABS 136 or SABS 1143 (as applicable) for the type shown on the drawings or scheduled. Nuts shall be of at least the strength grade appropriate to the grade of bolt or other threaded element with which they are used.

Fitted bolts shall comply with the relevant requirements of SABS 136.

Except as provided for in 3.6.2, washers for bolts and nuts shall comply with the relevant requirements of SABS 1149.

PSH 3.6.2 Friction-grip Fasteners.

High-strength friction -grip bolts and associated nuts and washers s a capable of being reliably tightened to the applicable load recommended in SABS 094.

Other types of friction - grip fastener may also be used subject to approval and provided that they have mechanical properties not inferior to bolts complying with the relevant requirements of SABS 1282 and that they are capable of being reliably tensioned to the applicable load recommended in SABS 094.

PSH 3.7 MILD STEEL RIVETS.

Mild steel rivets shall comply with the relevant requirements of SABS 435.

PSH 4 PLANT

Plant and equipment used in the handling, fabrication and erection of steelwork shall comply with the requirements of the Machinery and Occupational Safety Act, 1983 (Act 6 of 1983), or the Mines and Works Act, 1956 (Act 27 of 1956), as applicable. Handling and lifting plant shall have enough capacity to ensure that steelwork is placed in its final position without distortion or undue stressing of members.

The use of cranes, lifting devices, safety belts, harnesses, nets and barricades shall comply with the recommendations given in BS 5531.

Pneumatic or hydraulic equipment shall be used for the driving of river.

PSH 5 CONSTRUCTION

PSH 5.1 DRAWINGS AND SHOP DETAILS

PSH 5.1.1 Design Drawing.

The Engineer's drawings will include a general arrangement of the proposed structure indicating all structural member sizes and special connections and will be sufficiently comprehensive to allow the detailing of all connections.

Dimension figures on the drawings shall be deemed to be correct, even if the drawings are not to scale. No dimension shall be obtained from a drawing by scaling.

PSH 5.2 FABRICATION

PSH 5.2.1 General.

Al1 structural steel shall, both before and after fabrication,

a) be within the tolerances specified in Clause 6; and

b) unless required to be formed to a particular shape, be flat straight and free from twists. Any necessary straightening or forming shall be carried out by methods that neither weaken nor deface the material.

PSH 5.3 ASSEMBLY

PSH 5.3.1 General.

The component parts shall be so assembled that

a) the whole and all parts of the finished structure are within the tolerances specified in Clause 6;

b) no member is bent, twisted or otherwise damaged; and

c) specified cambers are obtained.

PSH 5.4 SETTING-OUT.

Before the Contractor commences erection of steelwork on Site, he shall check that the setting-out and the levels of holding-down bolts and of concrete foundations, beam faces, columns, etc., are in accordance with the drawings provided and he shall report any discrepancies immediately to the Engineer.

PSH 5.5 ERECTION

PSH 5.5.1 Procedure

Where required in terms of the project specification and before commencing erection of steelwork on Site, the Contractor shall submit to the Engineer, for his general scrutiny and information, full details of the erection procedure and methods of erection.

PSH 5.5.2 Storage and Handling

All structural steel at the Site shall be so stored and handled that it is not subjected to damage or excessive stress and is kept clean.

PSH 5.5.3 Safety during Erection

While it is encumbent on the Engineer to ensure that the structure or elements thereof can be erected without loss of stability or without overstress, the Contractor i s responsible f o r the maintenance of safety standards during erection.

Adequate temporary bracing or stiffening shall be provided by the Contractor during erection to protect the structure from

a) the possibility of loss of stability or overstressing of the structure in its partly completed state, and

b) the imposition of loadings (in particular those due to erection equipment or procedures) that are more severe intended to sustain.

All temporary works provided for time shall be left in position until such time as erection is sufficiently advanced for them to be no longer required.

The Contractor shall ensure that connections for temporary bracing, members or cleats and additional holes used to facilitate handling or erection do not weaken the permanent structure or impair its serviceability. If he has any doubts, he shall ask the Engineer for instructions.

PSH 5.5.4 Alignment.

All pockets that are to receive holding-down bolts, fittings or steelwork shall be cleaned out immediately before erection is commenced. Each part of a structure shall be aligned as soon as possible after it has been erected.

Members shall not be permanently connected until enough of the structure has been aligned, levelled, plumbed and temporarily connected to ensure that they will not be displaced during the erection or alignment of the remainder of the structure.

PSH 5.5.5 Corrections.

Drift pins, jacking equipment and the like shall not be used to bring improperly fabricated members into place. A moderate degree of reaming and cutting, however, may be employed to correct minor misfits only if in the opinion of the Engineer, this will not be detrimental to the strength or appearance of the steelwork.

Except as allowed in terms of 5.2.4.3, no burning of holes in steelwork will be permitted without the written consent of the Engineer.

PSH 5.6 GROUTING OF SUPPORTS

PSH 5.6.1 Responsibility.

Unless otherwise required in terms of the project specification, grouting or bedding will be carried out by others to the Engineer's specification and approval. The Contractor shall ensure that all grouting has been completed before cladding and other loading is applied.

PSH 5.6.2 Preparation.

The Contractor shall ensure that no bedding or grouting is carried out other until enough of the structure has been aligned or, for multi-storey buildings, a sufficient number of bottom lengths of stanchions have been aligned, level led and plumbed and adequately braced by the Contractor by means of other structural components that have been level led and are securely held by their permanent connections.

Steel wedges or packings or other level ling devices of adequate strength and rigidity shall be used to support the steelwork. Immediately before being grouted, the space and all pockets under the steel shall be cleared of all debris and free water.

PSH 5.6.3 Bedding of Stanchions in Foundation Pockets.

Before steel sections are embedded in concrete complete specified corrosion protection system shall be applied to each member down to at least 100 mm below the level of the concrete. In the case of a paint system, an additional final coat of the specified protection shall be applied to the surfaces of each member and shall extend to at least 100 mm above and below the level of the concrete. Where grouting is to be carried out by the

Contractor, stanchions in pocket bases shall be grouted with dense concrete having a characteristic cube strength at 28 d of not less than that of the surrounding concrete base, or 20 MPa, whichever is the greater, and with a maximum aggregate size of 10 mm. Rapid-hardening or high alumina cement may be used only when specifically authorized by the Engineer. At least two-thirds of the depth of the pocket shall be filled initially and the stanchions shall then remain undisturbed for at least 48 h (or an equivalent period where rapid-hardening or high alumina cement is used) after which the pocket shall be filled.

PSH 5.6.4 Encasing of Steelwork in Foundations.

All structural steelwork in foundations shall be solidly encased in dense with a minimum of 100 mm .

PSH 5.7 SUNDRY ITEMS

PSH 5.7.1 Handrails.

Handrails shall be of the type and shall be purpose made in the style and shapes given in the project specification and shown on the drawings. The contractor shall ensure, by making in-situ measurements before manufacture is started, that the handrails suit the situation in which they are to be installed.

Handrails shall be supplied complete with all the necessary fixing bolts, nuts, etc.

PSH 5.7.2 Ladders.

Ladders shall be manufactured in accordance with the details and general arrangements shown on the drawings. Ladders shall be supplied complete with all the necessary bolts, nuts and washers for fixing .

PSH 5.7.3 Open Grid Floors.

Open grid steel covers and floor panels shall be manufactured by by an approved firm specializing in such work. They shall be pressure locked or welded (or both). All spanbars shall have a thickness, depth and spacing such that the deflection of any bar under design load conditions does not exceed 1/200th of the clear span, or 10 mm. whichever is the lesser. Flooring shall be made in panels of sizes that conform to the dimensions given on the drawings. The panels shall be supplied prefabricated with cut-outs that conform to the details given. Unless authorized to do so, the Contractor shall not cut or weld open grid floor panels on Site.

PSH 5.7.4 Floorplate Floors.

Floorplate shall be as specified and shall have an approved raised pattern. Lifting key holes shall be provided as specified.

PSH 6 TOLERANCES

PSH 6.1 GENERAL

PSH 6.1.1 Verification of Dimensions

Verification of dimensions shall be carriedout

a) on steel that is a t normal temperature (see 2.3), measurements being made with a tape that is at normal temperature and tensioned to 70 N;

b) for erection within 3 hrs after the time of sunrise or within 3 h before the time of sunset, or at such time when, in the opinion of the Engineer, the effect of the sun is minimal. Distortion caused by the sun's rays striking one side of a member or structure shall be taken into account, and measurements shall be made only a t times when this effect is non-existent or of no consequence.

PSH 6.1.2 Fabrication and Assemble Tolerance

The permissible deviation on the dimensions of components (such as gussets, cross - bracing, etc.) and on the location of bolt holes in components and elements of a structure shall be ±2 mm. Holes for connections shall be aligned as specified.

PSH 6.1.3 Rounding Up of PDs.

All calculated permissible deviations shall be rounded up to the next whole millimetre.

PSH 6.2 TOLERANCES ON DIMENSIONS, ACCURACY OF ERECTION, ETC.

PSH 6.2.1 Rolled Sections.

The tolerances on cross-sectional dimensions of rolled sections shall be as specified in the latest issue of the South African Institute of Steel Construction's structural steel tables.

PSH 7 TESTING

PSH 7.1. TEST CERTIFICATES.

Where required in terms of the project specification, test certificates, or cast analysis certificates (or both), pertaining to the steel to be used shall be supplied to the Engineer by the Contractor.

PSH 7.2 INSPECTION.

The Engineer shall have access at all reasonable times to all places where the work is being carried out and shall be provided with all the necessary facilities for inspection during all stages of construction.

PSH 7.3 INSPECTION AND TESTING OF WELDS.

The Contractor shall examine welds as follows:

a) Visual examination of all welds to check that

1. there are no uneven leg lengths and that there is no cracking or unacceptable undercutting or porosity, as recommended in SABS 044: Part III,

and

2. full fusion is being achieved while welding is in progress;

b) dimensional checks in accordance with BS 5135.

Only where so required in terms of the project specification shall welders be tested or destructive or non-destructive tests be carried out.

Welds done in the shop(s) shall be tested and, if necessary, rectified before despatch.

PSH 8 MEASUREMENT AND PAYMENT

PSH 8.1 BASIC PRINCIPLES

Work involving steel members and platework will be measured by mass of steel.

Sundry items will be measured by number, mass or area, depending on the nature of the item (see 8. 1. 2).

Where there is considerable repetition of articles of the same description and mass (e.g. ladders, foundation bolts, frames, loose cleats, etc.) that are measured by mass, the number of such articles and the mass or length, as applicable, of each will be stated in the schedule.

PSH 8.2 COMPUTATION OF QUANTITIES

PSH 8.2.1 The mass of steelwork will be calculated on the basis of the nominal mass per unit length as stated in the South African Institute of Steel Construction's structural steel tables or, where not so stated, the mass will be calculated from a steel density of 7 850 kg/m³. The mass of fittings such as cleats, gussets, battens and stiffeners will be added t o the mass of the members.

PSH 8.2.2 Tolerances for rolling margins and other permissible deviations will be neglected.

No deductions will be made for holes for fasteners or for milling or planing, and no additions will be made for rolling margin, waste, weld metal or shop fasteners.

PSH 8.2.3 Unless otherwise stated, gussets will be measured on the basis of the minimum enclosing rectangle. Each large, shaped plate such as a roof, a bottom to a circular tank or a hopper bottom to a bunker or a silo, will be measured on the basis of the net size of the element.

SABS 1200 L MEDIUM-PRESSURE PIPE LINES.

PSL1. SCOPE

PSL1.1 This specification covers the supply and installation of pipelines of diameter up to 1 000 mm, complete with ancillary works, for transporting water under working pressures of up to 2.5 MPa,

PSL3. MATERIALS

PSL3.1 GENERAL.

Pipes and fittings shall be of the types specified in the schedule or in the project specification and, unless otherwise required in terms of the project specification, they and their couplings shall be capable of withstanding the applicable test pressure specified in 7.3.1. All pipes and fittings shall be supplied complete with couplings and jointing material.

Satisfactory temporary end covers shall be provided for the protection of threads, flanges, and prepared ends of plain-ended pipes and fittings, and to prevent damage to internal lining during transportation and during handling 011 Site.

Pipeline materials shall be so transported, stored, and handled that pipes are not overstressed at any time and fittings are not damaged in any way. All thin-walled, flexible, and soft-coated pipes shall be handled with particular care and shall be so stored that they are not subject to concentrated pressure from stones or other objects. Pipes damaged or cracked in any way shall be removed from the Site.

PSL3.2 AC PIPES AND SPECIALS

AC pipes shall comply with the requirements of SABS 286 for COD pipes or SABS 946 for CID pipes. COD pipes shall be used for all sizes up to and including 200 mm diameter unless otherwise scheduled or stated in the project specification. AC pipes shall be bitumen-dipped if so required in terms of the project specification. (See 3.8.1 for jointing materials.) Specials for use with an AC pipeline, whether of AC, CI, or steel, shall be rated at not less than the pressure rating of the pipeline.

PSL 3.4 STEEL PIPES, FITTINGS AND SPECIALS

PSL 3.4.2 PIPES OF NOMINAL BORE UP 150 MM

Unless otherwise scheduled or required in terms of the project specification, steel pipes and fittings of nominal bore up to 150 mm shall be of medium class, shall be screwed, and shall comply with the applicable requirements of SABS 62.

PSL3.4.3 PIPES OF NOMINAL BORE OVER 150 MM

Steel pipes of nominal bore over 150 mm shall comply with the applicable requirements of SABS 719 appropriate to the grade of pipe scheduled or specified in the project specification and, in addition.

a) The minimum wall thickness shall be 4 mm for pipes of nominal outside diameter not exceeding 400 mm, and 5 mm for pipes of nominal outside diameter exceeding 400 mm but not exceeding 500 mm:

b) The pipes shall be plain ended and of one fixed length between 9 m and 18 m; and
c) The height of inner weld reinforcement and of upset metal on the inner surface shall not exceed 1 mm.

PSL3.4.4 FITTINGS AND SPECIAL.

Steel pipe fittings and specials of nominal bore larger than 150 mm shall be fabricated in accordance with BS 534 from pipe complying with the requirements given in 3.4.3 addition, all pipes special and fittings shall be free of weld spatter and all sharp corners and edges shall be ground smooth and round before painting.
All shop welding of slip-on and other couplings for steel pipes and specials shall be carried out by welders who are competent in terms of the procedure approval test of AP1 1104, except where the project specification makes provision for another competence test to be agreed between the Engineer and the Contractor

PSL3.6 PRESTRESSED CONCRETE PIPES.

Prestressed concrete pipes shall comply with the requirements of SABS 975 and the nominal internal diameter, the nominal effective length, the hydraulic test pressure, and the proof load shall be as stated in the projects specification. The Contractor shall supply the information detailed in Appendix E: to SABS 975 when so requested by the Engineer.
Metal couplings of all types and the means used for distributing coupling stresses to the concrete shall be capable of withstanding shall stresses caused by proper tightening of the bolts without any sign of cracking or other damage.

PSL3.7 OTHER TYPES OF PTPES
PSL 3.7.1 uPVC PIPES.

uPVC pipes and fittings shall be fitted with spigot and socket rubber ring joining and shall comply with the relevant requirements of SABS 966.

PSL 3.11 MANHOLES AND SURFACE BOXES
PSL3.11.1 BRICKS

Bricks shall be obtained from an approved manufacturer and shall be either general purpose (special), burnt clay, or Engineering bricks that comply with the applicable requirements of SABS 227.or Class S14 calcium silicate bricks that comply with the applicable requirements of SARS 285.The Contractor shall submit to the Engineer samples of the bricks that he intends using in the construction of the works (see Subclause 3.1 of SABS 1200 A or SABS 1200 AA, as applicable). The samples of bricks that are approved will be retained by the Engineer

PSL3.11.3 CONCRETE
SABS 1200 GA, as applicable step Irons. Step irons shall be of malleable cast iron complying with the applicable requirements of RS 1247 and of length suitable for fixing in brick, in situ concrete, or precast concrete, as application. Except as required in 3.11.2, concrete shall comply with the requirements of SABS 1200 C; or

PSL3.11. 5 Manhole Covers and Frames

PSL3.11.5.1 Unless otherwise required in terms of the project specification, covers and frames for manholes shall comply with the requirements of SABS 558 for Type 26 in the case of manholes in roads and other areas subject to road traffic loads, and Type 4 in the case of manholes in areas not subject to such loads. Covers and frames for manholes shall be supplied in matching sets. The cover and frame of each set shall each bear a serial number (applied by means of an oil paint) to enable the sets to be identified. The Contractor shall ensure that, when installed, the covers and frames still comply with the requirements of SARS 558 for freedom from warp and evenness of seating.

PSL5. CONSTRUCTION

PSL5.1 PLANNING

PSL5.1.1 General.

A pipeline shall be laid and bedded (see SABS 1200 LR) to even grades and to the levels and alignments shown on the drawings or as directed. It shall be laid centrally in the trench in such a manner that the side allowance conforms to the applicable value specified in Clause B of SABS 1200 DB. For ease of inspection and testing the pipes shall be laid with the manufacturer's class and quality identification marks visible from the top of the trench, unless, in the case of large pipes, the position of lifting eyes renders this impracticable. Control of laying and bedding shall be by means of boning rods and sight rails or an acceptable laser beam device. Sight rails shall be painted black and white and shall be fixed securely and accurately.

PSL5.1.2 DAMAGE

Each pipe and each fitting shall be thoroughly cleaned and carefully examined for damage and defects immediately before laying. Should any damaged or defective pipe or fitting be laid, it shall be removed and replaced at the Contractor's expense and to the satisfaction of the Engineer

PSL5.1.3 KEEPING PIPELINES CLEAN

Matter and water into the pipe (s) for a significant period, the last laid section of each pipe shall be plugged, capped, or otherwise tightly closed until laying is recommenced. During laying and jointing of pipes and until the pipe line (s1 has/have passed the require acceptance tests and the trenches have been backfilled, all trenches shall be kept in a state which, in the opinion of the Engineer, is reasonably dry.

PSL5.1.4 DEPTH AND COVER

PSL5.1.4.1 unless otherwise d Cover shown on the drawings or required in terms of the job specification or ordered, the depth of excavation for trenches for medium-pressure pipe lines shall not exceed 1.5 m.

PSL5.7 MANHOIES

PSL5.7.1 GENERAL.

Each valve of diameter 300 mm and more shall be housed in a manhole constructed in accordance with the details shown on the applicable drawings, and in accordance with 5.8 or as otherwise specified in the project specification.

PSL5.7.2 PRECAST MANHOLES.

Precast manholes shall be constructed in accordance with the applicable details shown on the drawings.

PSL7. TESTING

PSL7.1 GENERAL.

AS the work proceeds, pipelines shall be tested in convenient lengths by means of test
Equipment supplied by the Contractor (see 4.3).In the case of steel pipelines butt-welded in the field, joints shall be tested in accordance with 7.2 immediately after being made. Each test shall be carried out in the presence other Engineer or his representative. The Contractor shall be responsible for carrying out all tests and for all expenses incurred in this connection (see 8.2).

When carrying out the hydraulic test (see 7-31, the Contractor shall ensure that all valves, tees, and bends are properly secured and shored to prevent movement of pipes and fittings and, should any such movement occur, the Contractor shall, at his own expense, reposition and, if necessary, repair the pipes and fittings and the securing means.
Until each section of the pipeline has been subjected to the hydraulic test and has complied with the applicable requirement for leakage rate given in 7.3.3, the pipeline will not be accepted. The hydraulic test shall be repeated until the Engineer is satisfied that the section under test complies with the said requirement.

PSL8. MEASUREMENT AND PAYMENT

PSL8.1 GENERAL.

Excavation and backfilling of trenches, and laying of medium-pressure pipelines, will be measured separately under SABS 1200 DB and 8.2, respectively. Attention is drawn particularly to 5.1.4.1, in terms of which no payment will be made for depths of excavation in excess of 1,5 m unless a Greater depth is shown on the drawings, or is required in terms of the project specification, or has been ordered in writing by the Engineer.

PSL 8.2 SCHEDULED ITEMS

PSL 8.2.1 Supply, Lay, and Bed Pipes Complete with Coupling:

(i) 75mm diameter pipe .... Unit: m

(ii) 110mm diameter pipe ..... Unit: m

(iii) 80mm diameter pipe ..... Unit: m

(iv) 100mm diameter pipe ..... Unit: m

(v) 400mm diameter pipe ..... Unit: m

Pipelines will be measured by length over all lengths as laid. No deduction will be made for specials and valves. Separate items will be scheduled for each diameter and each type and class of pipe laid.

The rates shall cover the cost of the provision of the pipes complete with couplings, and the costs of the handling, inspecting, transporting, bedding, laying, jointing, cutting, testing and, when relevant, disinfecting of the pipes and the joints.

PSL 8.2.2.1 Extra-over 8.2.1 for the Supplying, Laying and Bedding of Specials Complete with Couplings..... Unit: No.

Extra-over 8.2.1 for the Supplying, Fixing, and Bedding of Valves

Specials and valves will be measured by the number of each type, class, and size.

The rates, which shall be extra-over the rates for 8.2.1, shall cover the cost of the provision of each special or valve, complete with couplings, and the cost of the handling, fixing , bedding, and testing of the special or valve, as applicable, and the cutting of the pipes.

No extra payment over and above the rates will be made in respect of any additional cutting, turning, and jointing of pipes required for the location of valves, specials, etc., in the positions given on the drawings.

Unless specific provision is made in the schedule, no separate payment will be made for the supply and fitting of any additional joints and jointing materials which may be required f o r the connection of shortened pipe lengths.

PSL 8.2.2.2 Extra-over 8.2.1 for the Supplying, Laying, and Bedding of Specials Complete with Couplings..... Unit: No.

PSL 8.2.3 Extra-over 8.2.1 for the Supplying, Fixing, and Bedding of Valves

Specials and valves will be measured by the number of each type, class, and size.

The rates, which shall be extra-over the rates for 8.2.1, shall cover the cost of the provision of each special or valve, complete with couplings, and the cost of the handling, fixing, bedding, and testing of the special or valve, as applicable, and the cutting of the pipes.

No extra payment over and above the rates will be made in respect of any additional cutting, turning, and jointing of pipes required for the location of valves, specials, etc., in the positions given on the drawings.

Unless specific provision is made in the schedule, no separate payment will be made f o r the supply and fitting of any additional joints and jointing materials which may be required for the connection of

PSL8.2.3 Extra –over for cutting the existing pipes and the connection of the new pipes……unit (No),

The total length of the pipeline ordered to be recovered will be measured by length for each stated depth range. No deduction will be made for valves, specials, and the like.

The rate shall cover the cost of the excavation and removal of the pipes, valves, and fittings from the trench, the handling and transporting to the Contractor's store on Site, the cleaning and listing of the salvaged recovered materials, and the backfilling of the trench.

PS L 3.10 VALVES

PS L 3.10.1 Gate Valves

(a) 200mm isolation valve…….. unit (No.)

All gate valves shall comply with the requirements of SANS 664 – Figure 2 and shall be suitable for a working pressure of 1.0 MPa. All gate valves shall be supplied with hand wheels, unless shown otherwise on the drawings.

Gate valves shall have flanged ends unless shown otherwise on the drawings and shall open clockwise. The direction for opening and closing shall be permanently displayed on the valves. Valves shall have non-rising spindles.
Spindles, spindle nuts, gate rings and body rings shall all be of bronze.

All flanged gate valves shall be drilled according to SANS 1123 Table 1600/3.

PSL8.2.10 Temporary Valves,

Payment for the supply or loan of temporary valves, end caps, blank flanges, or other isolating devices ordered by the Engineer in terms of 7.3.1.1 will be made at day work rates or at a price to be agreed by the Engineer, unless the method of payment for the work has been dealt with in the project specification and a suitable item included in the schedule.

PSL 8.2.11 Anchor/Thrust Blocks **Unit: m^3**

Substitute L 8.2.11 with the following:

Anchor and thrust blocks shall be measured per cubic metre concrete and the Tendered rate shall include for all formwork and reinforcement (where specified) for the required dimensions.

"The concrete will be measured net by volume to the specified width and depth in excess of the external volume of the pipe (i.e. the volume of the pipe will be deducted).

The rate shall cover the cost of formwork and concrete."

PSL 8.2.13 VALVE CHAMBERS

Valve and hydrant chambers, manholes, etc., will be measured as complete units.
The rate shall cover additional excavation (see Sub clauses 8.2.2 and 8.2.3 of SADS 1200 LIB), materials, plant, and labour necessary for the complete construction including the installation of the surface boxes or covers.

PSL 8.2.18 Pipe Markers **Unit: No**

Pipe markers will be measured and paid for by number and the tariff must include all excavation, installation, and paint and numbering of marker, concrete as well as labour as described in PS L 5.11.

PSLF 8.2.10 Supply and Erect 32mm diameter HDPE pipe including joints, fittings and Connections Complete ……..... Unit: No.

Where the materials to be excavated, the depth of cover over the water main and the erf connections, and the lengths of the erf connections are reasonably consistent, separate items will be scheduled only for connections and stop taps of different sizes and, if applicable, for meters of different sizes or types.

The rate shall cover the cost, as applicable, of providing the pipes, saddles, ferrules, stop taps, meters, surface boxes, marker posts, and excavating, connecting to the water main, laying in light sandy material, jointing, backfilling, testing, and completing the service connection.

SABS 1200 LB OF 1983 BEDDING FOR PIPES

SABS 1200 LB OF 1983

PSLB 1 SCOPE

This specification covers the bedding (bedding cradle and selected fill blanket) for buried pipes carrying fluids under pressure or gravity.

Note: The standards referred to in the specification are listed in Appendix A

PSLB 3 MATERIALS

PSLB 3.1 SELECTED GRANULAR MATERIAL

Selected granular material shall be material of granular, non-corrosive nature that is singularly graded between 0.6 mm and 19 mm, is free-draining, and has a compatibility factor (as determined by the test given in section LB of Part 3 of SABS 1200) not exceeding 0.4 or such other value as is laid down in the project specification

PSLB 3.2 SELECTED FILL MATERIAL

Selected fill material shall be material that has a PI not exceeding 6 and that is free from vegetation and from lumps and stones of diameter exceeding 30 mm.

PSLB 3.3 BEDDING

Bedding for rigid pipes shall be of Class A, B, C or D (see Drawing LB-1) and bedding for flexible pipes shall be selected granular material and selected fill material (see Drawing LB-2).

The bedding cradle for Class A bedding shall be concrete (see 5.2.1(a)).

Bedding cradles for Classes B, C and D bedding shall be of selected granular material (see 3.1). The material for the selected fill blanket shall in all cases comply with the requirements of 3.2.

PSLB 3.4 SELECTION

PSLB 3.4.1 Suitable Material Available From Trench Excavation

(See also 8.1.2) the excavation of a pipe trench shall comply with the requirements of sub clause 5.4 of SABS1200 DB, and the provisions of the sub clause 3.7 of SABS 1200 DB (in terms of which, for the purpose of providing bedding materials, the Contractor is not required to use selective methods of excavating) shall apply. The Contractor will be permitted (but is not required) to screen, wash, or otherwise treat excavated material in order to produce material suitable for bedding or covering the pipeline. The Contractor shall take every reasonable precaution to avoid burying or contaminating material that is suitable

and is required for bedding or covering the pipeline

PSLB 3.4.1 Suitable Material Not Available From Trench Excavation

(See also 8.1.2). When material suitable for the use as selected fill material or selected granular material is not readily available from trench excavation material, obtain suitable material to replace the shortfall

a) From other necessary excavations on the site; or
b) By opening up borrow pits at approved areas located at intervals along the route of the pipeline; or
c) By importing from commercial or other sources

PSLB 4 PLANT

PSLB 4.1 PLACING, COMPACTING AND TESTING EQUIPMENT

PSLB 4.1.1 Placing and Compacting

Adequate equipment shall be provided for the placing and compacting of bedding as specified in 5.1.3 and 5.1.4

PSLB 4.1.2 Testing
The Contractor shall provide the necessary test equipment for performing on site the tests referred to in 7.1 and 7.2

PSLB 5.3 PLACING AND COMPACTING OF FLEXIBLE PIPES

In addition to complying with the applicable requirements of 5.1, the Contractor shall construct bedding for flexible pipes in accordance with the following requirements

a) Bedding cradle :

Flexible pipes shall be supported on a continuous bed of selected granular material of a compacted depth at least 100 mm and covering the full width of the trench. The granular material shall be compacted to the density specified in 5.1.4. Additional selected granular material shall then be placed carefully and evenly between the sides of the trench and the pipeline, in layers of uncompacted thickness approximately 100 mm, as shown on Drawing LB-2 and in accordance with the construction details shown for flexible pipes on Drawing LB-3(d). Each layer shall be compacted individually to the density specified in 5.1.4. Particular care shall be exercised to prevent damage, deflection, or displacement of the pipeline.

b) 200 mm selected fill blanket.

After completion of the bedding cradle, selected fill blanket shall be placed carefully in layers of 100 mm uncompacted thickness

over the full width of the trench and shall be compacted to the density specified in 5.1.4 up to a height of at least 300 mm above the crown of the pipeline. Special care shall be taken when compacting over the pipeline.

PSLB 6.2 COMPACTIVITY FACTOR

The compatibility factor for selected granular material (see 3.1) may be less than, but shall not exceed, the approved value.

PSLB 7 TESTING

PSLB 7.1 DENSITY

The Engineer may order density tests to be carried out to determine the density and grading of the bedding. The tests may be carried out by the sand replacement method or, where the grading of the bedding is such that the particle size is not less than 0.075 mm and not more than 2 mm, by use of a dynamic cone penetrometer.
If the density is below that specified, the Engineer may order removal and re-compaction.

PSLB 7.2 COMPACTIVITY

The Engineer may order the compatibility test given in the subclause 4.2 of section LB of part 3 of SABS 0120 to be carried out on any material used or to be used in the bedding cradle.

PSLB 8 MEASUREMENT AND PAYMENT

Provision of Bedding from trench excavation
a) Selected granular material..... Unit: m³
b) Selected fill material..... Unit: m³

The rates shall cover the cost of acquiring, from within 0,5 km, bedding that complies with the relevant requirements of the specification, of delivering it to points alongside the trench spaced to suit the Contractor's methods of working, and of disposing of displaced material within a free haul distance of 0,5 km.

NOTE: In terms of the standardized specifications covering pipelines, the rate for the supply and laying of pipelines covers the cost of handling bedding material from alongside the trench and placing it under and around the pipeline.

PSLB 8.2.2 Supply only of Bedding by Importation
PSLB 8.2.2.1 from other necessary excavations (Provisional)
a) Selected granular material..... Unit: m³
b) Selected fill material..... Unit: m³

The rate shall cover the operations specified in 8.2.1.

PSLB 8.2.2.2 from borrow pits (Provisional)

a) Selected granular material..... Unit: m³

b) Selected fill material..... Unit: m³

The rate shall cover the cost of acquiring (including the cost of opening up, and subsequently spreading surplus material, overburden, and topsoil in the manner specified in sub clause 5.2.2.2 of SABS 1200 D or sub clause 5.2.2 of SABS 1200 DA, as applicable), regardless of distance, the required bedding from borrow pits (see sub clause 8.3.4 of SABS 1200 D or sub clause 8.3.4 of SABS 1200 DA, as relevant), of delivering it to points alongside the trench spaced to suit the Contractor's methods of working, and of disposing of material displaced by such importation, within a free haul distance of 0.5 km.

PSLB 8.3.4 Encasing of Pipes in Concrete …….. Unit: m

Separate items will be scheduled for each size of pipe and for each grade of concrete specified.

The volume will be computed from the dimensions of the concrete as given on the drawing.

The rate shall cover the cost of dealing with any excavation (in all materials including disposal of surplus) that is additional to that measured under the item for pipe trench excavation, the cost of encasing the pipe in concrete including the cost of formwork (if any), etc., and the cost of formwork to form flexible joints at 4 m centres.

SABS 1200 LD SEWERS (SABS 1200 LD - 1982)

PSLD 1.1 PIPES, FITTINGS, AND PIPE JOINTS

PSLD 1.1.1 Pitch- Impregnated Fibre Pipes

Pitch-impregnated Fibre Pipes and couplings couplings shall comply with the relevant requirements of SABS 921 and shall have suitable approved flexible joints.

PSLD 1.1.2 uPVC Pipes

uPVC Pipes shall comply with the relevant requirements of SABS 791 and shall have suitable approved flexible joints

PSLD 1.1.3 Non-Cellular Rubber Joint Rings

Rubber joint rings shall comply with the relevant requirements of Part I of SABS 974

PSLD 1.1.4 Flexible Joints

Flexible joints shall be that, when a joint is tested in accordance with Subclause 4.4 of Section LD of Part 3 of SABS 0120, there shall be no sign of leakage in any of the tests.

PSLD 2 ALTERNATIVE MATERIALS FOR PIPES, FITTINGS, JOINTS.

Should the Contractor propose to use pipes and fitting of materials other than those referred to in 3.1, he shall submit for approval detailed specifications including full details of the type of joints and specials he proposes to use with such pipes and fittings. The Contractor shall not use such pipes or fittings until he has obtained written approval for their use from the Engineer.

PSLD 3 MANHOLES, CHAMBERS, ETC

PSLD 3.1 Bricks

Brick shall be obtained from an approved manufacturer and shall be either general purpose (special) burnt clay bricks that comply with the applicable requirements of SABS 227, or Class S14 calcium silicate bricks that comply with the applicable requirements of SABS 285. The Contractor shall submit to the Engineer samples of the bricks that he intends using in the construction of the Works (see Subclause 3.1 of SABS 1200 A or SABS 1200 A or SABS 1200 AA, as applicable) The samples of bricks that are approved will be retained by the Engineer.

PSLD 3.2 Precast Concrete Sections

Precast concrete sections shall comply with the application requirements of SABS 1294. Sectional spun concrete cylinders shall have been manufactured from dolomitic aggregate where so required in terms of the project specification, and shall comply with the requirements for pipes of SC type and Class A of SABS 677. Joints between cylinders shall be of the inter locking self-centring type. The joints shall be sealed in an approved manner to form a watertight joint.

PSLD 3.3 Concrete

Except as required in 3.5.2 and except that only dolomitic aggregate shall be used where so required in terms of the project specification, concrete shall comply with the requirements of SABS 1200 GA or SABS 1200 G, as applicable.

PSLD 3.4 Manhole Cover and Frames

Manhole covers and frames shall comply with the applicable requirements of SABS 558, and except where other type are scheduled, shall be of Type 2A in the case of manholes in roads and other areas subject to road-traffic loads, and of Type 4 in the case of manholes in areas not subject to such loads.

PSLD 3.5 Marker Posts

Marker posts shall comply with the applicable requirements of the project specification.

PSLD 4 LAYING AND BEDDING

PSLD 4.1 Preliminary Inspection

Each pipes and fitting shall be thoroughly cleaned out and carefully examined for damage immediately before laying. The onus of detecting damaged pipes and fittings before installation shall be on the

Contractor. Should any damaged pipe or fitting be found in the sewer after it has been laid, the damaged item shall be removed and replaced at the Contractor's expense.

PSLD 4.2 Alignment

Pipe shall be laid on the specified bedding cradle true to designated line and level, and the bedding shall be placed and compacted in accordance with the applicable requirement of Subclause 5.2 of SABS 1200 LB. Designated invert levels shall take precedence over design depths shown on drawings. AC pipes that have any deviation from straightness (see SABS 819), shall be so laid that preference is given to level over line.

PSLD 4.3 Method

The method of laying and bedding shall such that

a) barrels of pipes bear evenly on the bedding for their full length;

b) no packing is used under the barrels; and

c) no socket or coupling is greater than 1 in 10, anchor blocks shall be constructed to the details shown on Drawing LD-1

PSLD 4.4 Cutting

Pipes shall be so cut as to obtain a clean end.

PSLD 4.5 Pipes of Different Materials

Pipes and fittings of different materials shall be jointed only with special adaptors recommended by the pipe manufacturer(s).

PSLD 4.6 SEWERS TO BE KEPT CLEAN

All pipes openings shall be sealed by the Contractor to ensure that no water, stones, or other foreign matter enters the sewer during or after laying.

PSLD 4.7 CONNECTION TO MANHOLES.

The sewer shall be so jointed to the pipes built into manholes that there are two flexible joints on either side of each manhole as shown on Drawing LD-2

PSLD 5 CONNECTING SEWERS

PSLD 5.1 Location and Details

Connecting sewers of the diameter scheduled or shown on the drawings shall be laid from junctions provided in the main sewer to the position and to the depth shown on the drawings or required in terms of the project specification.

The construction details of direct and sloping drop connections shall be in accordance with Drawing LD-7 or Drawing LD-8, as applicable

PSLD 5.2 Marker Posts.

If market posts are scheduled, the Contractor shall place them to mark the position of the end of each future pipe connection in the manner specified in the project specification.

PSLD 5.3 Recording Location.

In addition to placing any marker required, the Contractor shall record the following data and, at the time of recording, shall make the data available to the Engineer to enable him to check the accuracy of the record:

a) The name of the street;

b) The number of the plot or erf;

c) The location measurements of the end of the connection in relation to the nearest boundary peg(s)

d) The depth of the invert at the end of the connection;

e) A description of the boundary peg(s) (i.e. the peg(s) from which the location measurements were taken).

f) The distance between the end of the connection and the plot boundary line, the position of the junction on the main sewer, and all such information as the Engineer may require to compile 'as built ' drawing;

g) The size of the connection.

On completion of the Contract, or from time to time, as directed, the records shall be handed to the Engineer.

PSLD 5.4 ACTION TO BE TAKEN DURING AND AFTER TESTING

The Contractor shall make good any defects that may be found while the sewer is under test and after that the tests shall be repeated at his expense until the sewer is found to comply with the specification.

After the sewer has passed the tests all access lids shall be properly sealed with bitumen or by any other approved method that will ensure that they are watertight,

PSLD 7 TESTING

PSLD 7.1 General

PSLD 7.1.1 All acceptance tests shall be carried out in the presence of the Engineer and at such times and in such manner as the Engineer may direct.

PSLD 7.1.2 Subject to the provisions of 7.1.5, no pipe joint or fitting shall be covered until he applicable of the tests given in 7.2 have been completed and the Engineer has

a) given his written acknowledgement that the sewer or the specified section of it has passed the said tests, and

b) authorized such covering

PSLD 7.13 The sewer or any section of it shall be inspected by the Contractor who, if he deems it ready to be tested, shall advise the Engineer of his intention to subject the sewer or said section of it to the appropriate tests.

PSLD 7.1.4 The sewer shall be tested in sections between manholes or chamber, as applicable, the section being tested being isolated from other sections by means of suitable plugs or stoppers that have been braced adequately.

PSLD 7.1.5 Notwithstanding any acknowledgement by the Engineer in terms of 7.1.2, after backfilling and compaction have bee complete, the Engineer may order that the sewer be retested to check that it has not been distrurbed or damaged during backfilling.

PSLD 7.1.6 The Engineer may order one of the following to be carried out on the sewer or any section of it:

(a)(i) an air test on pipes (other than concrete pipes) of all sizes, or

(ii) in the case of pipes (other than concrete) of diameter up to 600mm, an air test followed by a water test;

(b) a water test in the case of pipes diameter up 750mm

a visual internal inspection in the case of pipes of diameter greater than 750mm.

PSLD 7.1.7 The Contractor shall provide all labour and apparatus (including expansible plugs and flexible bag stoppers) that may be required for carrying out the tests.

PSLD 7.1.8 All test results shall be recorded in the manner directed, whether or not the pipeline or section of pipeline has passed the test.

PSLD 7.2 TESTS AND ACCEPTANCE/ REJECTION CRITERIA

PSLD 7.2.1 Air Test

Pipelines above the water table: An approved air testing machine shall be use to raise the gauge pressure in the section of the pipeline under test first to 3.75 kpa. After a 2 min stabilization period the pressure shall be reduced to 2.5 kpa. The machine shall then be switched off and the time taken for the pressure to drop from 2.5 kpa to 1.25 kpa shall be determined. The time taken shall be at least the applicable of the following values:

Nominal Minimum time (in min) taken diameter of pipe, mm for pressure to drop

From 2.5 kpa to 1.25 kpa

100…….2

150…….3

200……..4

225……..4.2

250……..4.5

300……..6

375……..7.5

450……..……...9

600……..……12

750……..……15

(a) Pipelines below the water table: An approved air testing machine shall be used to raise the gauge pressure in the section of the pipeline under test to 2.5 kpa above the static water pressure, After this pressure has been attained and the machine stopped, any change in pressure shall be noted. There shall be discernible loss for a period of at least 5 min.

PSLD 7.2.2 Water Test

The section of the pipeline under test and, unless otherwise specified (see 7.2.6) the manhole chamber at the pipeline is subjected to a pressure of not less than 12 kpa and not more than 60 kpa.

During the test there shall be no discernible leakage of Water. An appropriate period, which shall be at least 10 min, shall be allowed for initial absorption, and the loss of water over the next 30 min shall be noted. The amount lost shall not exceed the applicable of the following rates per 100m of pipeline per hour:

Nominal	Minimum time (in min) taken diameter of pipe, mm	for pressure to drop

From 2.5 kpa to 1.25 kpa

100…….6.0

150…….9.0

200……..12.0

225……..13.5

250……..15.0

300……..18.0

375……..22.5

450……...……...27.0

600……..……36.0

750……..……45.0

Should any section of the pipeline fail to pass the water test, a re-test will be permitted and, in such case, acceptance or rejection of the section shall be determined on the result of the re-test.

PSLD 7.2.4 Test of Connecting Sewers

Each connecting sewer shall be tested between its upper end and the junction at the main sewer. The upper end of the connection shall be kept securely closed with expanding plugs during the test. Where practicable the contractor may test the main and connections simultaneously if he wishes. On completion of the test, the upper end of the connection shall be permanently sealed as directed by means of a plug stopper suitable for the type of pipe.

PSLD 7.2.5 Test of Rising Mains

After a rising main has been laid and the joints completed, the main shall be slowly charged with water, so that all air is expelled, and then tested in accordance with subclause 7.3 of SABS 1200L

PSLD 7.2.6 Water tightness of Manholes

Where so required in terms of the project specification manholes shall be tested, separately from the pipeline, for watertightness.

PSLD 8 MEASUREMENT AND PAYMENT

PSLD 8.1 General

Although measurement and payment for excavation and backfilling are covered in SABS 1200 LB, the relevant items for sewer will be scheduled in the sewer section. The operation of constructing the bedding cradle and selected fill blanket round and over the top of the pipeline will be regarded as part of the pipe- laying operation.

PSMJ: SEGMENTED PAVING (SABS 1200 MJ 1984)

PSMJ 1 SCOPE

This specification covers the paving of roads and other areas with precast concrete segmental blocks laid closely together, the joints between the units being filled with jointing sand.

NOTE: The standards referred to in the specification are listed in Appendix A.

PSMJ 3 MATERIALS

PSMJ 3.1 UNITS

PSMJ 3.1.1 General.

The units as supplied shall be free from cracks that detract from'their general appearance. At the point of manufacture no unit shall have any chip of dimension exceeding 15 mm or covering more than 3% of the periphery of the surface that is intended to be exposed. No unit shall have any protuberance of height exceeding 3 mm.

The surface texture and colour of the units shall fall within the range of texture and colour represented by the manufacturer's approved samples. The colour shall penetrate to a depth of at least 5 mm below the wearing surface of each unit and the coloured layer shall be integrally bound to the body of the unit.

PSMJ 3.1.2 Class, Strength and Type

. Except when the blocks are

a) required for paving subject to wheel loads exceeding 30 kN

or

b) required in terms of the project specification to be of Class 35 and are so scheduled; or

c) required to comply with both (a) and (b) above, the blocks used shall be of Class 25.

Class 25 blocks when tested in accordance with 7.4.1, shall have an average wet strength of at least 25 MPa and individual blocks shall have a wet strength of at least 20 MPa. Blocks shall be of the type (S-A, S-B or S-C) scheduled or given on the drawings or required in terms of the project specification, as applicable, and shall comply with the relevant requirements of SABS 105Ea).

PSMJ 3.2 KERBS AND CHANNELS

Kerbs and channels shall be of the sections shown on the drawings and shall comply with the relevant requirements of SABS 927 and, when applicable, SABS 1200 MK.

PSMJ 3.3 SAND FOR BEDDING AND JOINTING.

Sand for bedding and jointing shall be free from substances that may be deleterious to blocks. In addition, the grading of the sand shall conform to that given in (a) or (b) below, as applicable, except that, where evidence satisfactory to the Engineer has been provided of the successful previous use of sand having another grading, sand of such other grading may be used.

a) Bedding sand

Nominal sieve size (mm)	Passing
9.52	100
4,75	95-100
2,36	80-100
1.18	50-85
0,600	25-60
0,300	10-30
0,150	5-15
0,075	0-10

b) Jointing sand shall pass a 1,18 nun sieve and shall contain 10-50 %(m/m) of material that passes a 0,075 mm sieve.

PSMJ 4 PLANT

PSMJ 4.1 GENERAL

Plant that is operated on or over units that have been laid shall be such that it does not cause damage to or disturbance of the units (see 5.6).

PSMJ 4.2 ROLLER

A roller shall be subject to approval and shall be a light (2-4 t) vibratory roller or, where so required, a heavy pneumatic-tyred roller.

PSMJ 4.3 MECHANICAL COMPACTOR

.A mechanical compactor such as a flat-plate vibrator of high frequency and low amplitude, will be acceptable provided that it produces

a) for units of thickness exceeding 80 mm, a centrifugal force of 16-20 KN at a frequency of 65-100 HZ at a frequency of 65-100 Hz on a plate area of 0,35-0,5 m2 (i.e. sufficient to cover at least 12 units); or

b) for units of thickness not exceeding 80 nun, a centrifugal force of 7-16 KN at a frequency of 65-100 Hz on a plate area of 0,2-0,4 m2 (i.e. sufficient to cover at least 10 units).

PSMJ 5 CONSTRUCTION

PSMJ 5.1 PREPARATION

PSMJ 5.1.1 New Work

PSMJ 5.1.1.1 General.

Where the paving is to be laid on newly constructed earthworks or on an existing sub-grade that is too low, the sub-grade and Subbase shall be constructed in accordance with the requirements of SABS 1200 DM and SABS 1200 ME, respectively, and shall conform to the tolerance requirements of 6.2.

PSMJ 5.1.1.2 Depressions

.Depressions shall be filled with material that has the physical properties specified for Subbase material in SABS 1200 ME, and the material shall be compacted to 98 % of modified AASHM maximum density. Bedding sand shall not, under any circumstances, be used for this purpose.

PSMJ 5.1.1.3 Fall and level

.The top of the Subbase shall be so constructed that surface water cannot pond and shall have a longitudinal fall of at least 1 % and a transverse fall of at least 2%. The level after compaction shall be the designated level of the top of the Subbase ±10 mm (see 6.2(b)).

PSMJ 5.1.2 Existing Subbase Substandard or too High

PSMJ 5.1.2.1 Substandard layers

.Substandard layers and soft and unstable areas in the Subbase (or subgrade or formation, as applicable) shall be replaced or strengthened as specified in 5.1.2.2 or 5.1.2.3, as applicable.

PSMJ 5.1.2.2 Subbase not stabilized.

Any portion of an existing subbase that has not been stabilized and is too high shall be lowered, harrowed and reconstructed to such depth that, after compaction, the subbase layer is specification and, in addition, the fall and level shall comply with 5.1.1.3.

of the same standard and thickness throughout or it shall comply with the requirements of the project

PSMJ 5.1.2.3 Stabilized Subbase

.Any portion of an existing stabilized subbase that is too high shall be lowered, harrowed and reconstructed to such depth that, after compaction, the subbase layer is of the same standard and thickness throughout or it shall comply with the requirements of the project specification and, in addition, the fall and level shall comply with 5.1.1.3. Depressions created in the course of lowering a stabilized subbase shall be filled with stabilized subbase material and compacted to form a subbase of at least the same standard as that of the

existing stabilized subbase. Alternatively, in the case of depressions of depth greater than 50 nun, concrete having a 7 d cube strength of at least 5 MPa shall be used. The fall and level after compaction shall comply with 5.1.1.3.

PSMJ 5.2 EDGE RESTRAINTS

.Edge restraints consisting of kerbs or channels (see 3.2) or other approved edge strips, as scheduled or given on the drawings, shall be constructed on the subbase (or other specified formation) before any units are laid.

PSMJ 5.3 PLACING AND COMPACTING OF SAND BED

.Bedding sand shall be spread over the subbase and evenly screeded in the loose condition so as to achieve a compacted thickness of 25 ± 10 mm. When the sand is spread, its moisture content shall be 6 ± 2 %. The sand bed shall be laid slightly in advance of the placement of the units but only to the extent that the particular area of pavement can be completed on the same day.

Where the sand bed is accidentally compacted before the units are laid, it shall be raked and evenly rescreeded in a loose condition.

PSMJ 5.4 LAYING OF UNITS

,The principal lines of the paving unit pattern as laid shall be as specified in the project specification or given on the drawings, and as agreed with the Engineer before laying commences.

If the said principal lines are not so specified, given or agreed, the units shall be laid in a herringbone pattern if the block shapes permits and, where units cannot be so laid, they shall be laid with the long axis at right angles to the line of traffic. Except where curved patterns are required, the lines of the unit pattern shall be visually straight and parallel to major kerbs or buildings or other structures, as most appropriate and as approved.

Where appropriate, lines shall be set up at right angles to each other to control the alignment of the units. Joint widths shall be between 2 mm and 6 mm.

Whole units shall be laid first. Full depth closure units of special size or cut or part units split from whole units, shall be fitted into gaps around the perimeter and around service installations such as manholes.

Where plant has to be moved over an uncompacted newly laid pavement, boards shall be laid to prevent disturbance of the units.

PSMJ 5.5 FILLING GAPS IN UNIT PATTERN.

Each gap where a closure unit cannot be used, shall be filled, after thorough pre-wetting of all units bounding the gap, with concrete that has a 24 h cube strength of at least 15 MPa and contains aggregate of maximum nominal size 9,5 mm. Filling shall be kept to an absolute minimum and shall be to full unit depth in all cases. The concrete shall be cured for at least 24 h by covering it with moist sand or approved plastics sheeting or hessian firmly held down at the edges.

Where concrete is used for filling gaps, no compaction shall be carried out within 1 m of such filling until 24 h after the filling has been completed or until the specified cube strength of 15 MPa has been attained, whichever occurs first.

PSMJ 5.6 COMPACTION OF UNITS

PSMJ 5.6.1 General.

The manner of compaction of units shall be such that damage to the units is prevented.

At least two compaction passes shall be made over the paving as soon as practicable after laying, and before the introduction of any jointing sand. By the end of each day, compaction shall be completed to not closer than 1 m from any free edge. A uniform even surface shall be obtained over the paved area.

PSMJ 5.6.2 Paving Subject to Wheel roads Exceeding 30 KN

.Paving that is likely, in terms of the project specification, to be subjected regularly to wheel loads exceeding 30 KN shall, after joint filling (See5.7) be finally locked up with at least five passes of a heavy pneumatic-tyred roller over the entire area of paving.

The manner of compaction shall be as specified in 5.6.1.

PSMJ 5.6.3 Damaged Units.

Damaged units shall be placed and compacted before joint filling is carried out.

PSMJ 5.6.4 No Traffic until Joints Filled.

No vehicular traffic shall be allowed over the paving until all joints have been filled with sand (see 5.7).

PSMJ 5.7 JOINT FILLING.

The joints shall not be filled until all closure units have been inserted, all the necessary adjustments to line and level have been made and the pavement has been subjected to at least two passes of the compactor.

Sand that complies with 3.3(b) shall be broomed into the joints until they are full, and sufficient passes of a plate compactor shall be made to settle the joint filling. The procedure shall be repeated until the joints remain full after compaction.

On completion of compaction, all excess sand shall be broomed off and disposed of. Damage caused during compaction shall be made good by the Contractor at his own expense.

PSMJ 6 TOLERANCES

PSMJ 6.1 GENERAL

PSMJ 6.1.1 Paving as Laid

In addition to compliance with 6.2(c), the finished surface of the paving shall, in the opinion of the Engineer, present a regular and smooth appearance to the eye.

PSMJ 6.1.2 Method of Measurement of Deviations.

Any deviation from flatness of a plane surface will be measured as the maximum deviation of the surface from any straight line of length 3 m joining two points on the surface, determined by means of a straight-

edge the ends of which are supported on identical blocks of suitable thickness placed over each of the points.

PSMJ 6.1.3 Frequency of Checks on Smoothness.

The frequency of checks on smoothness carried out by the Contractor shall, in the case of roads, conform to the relevant requirements of Subclause 6.3 of SABS 1200 M and, where an area other than a road is being paved, a check shall be carried out on every 300 m² (max.) of area paved.

PSMJ 7 TESTING

PSMJ 7.1 General

PSMJ 7.1.1 Checking

.The Contractor shall carry out sufficient checks to satisfy himself that the materials used and the workmanship (construction, tolerance and strength) attained comply consistently with the specified requirements. Checks will be carried out by the Engineer and the results made available to the Contractor.

PSMJ 7.1.2 Standard of Finished Work not to Specification

The Engineer may carry out such checks as he deems necessary at any point or at any depth or on any layer. Where the Engineer's checks reveal that the material used or that the construction or tolerance standard achieved does not comply with the applicable requirements of the specification, or that the compaction specified has not been attained, the Contractor shall so rectify the work that the materials, construction and tolerance comply with the said requirements and the compaction specified is attained.

PSMJ 7.2 TRIAL SECTION

.Commencing from at least one permanent edge restraint the first section of paving of length at least 20 m and of width approximately 6 m laid as part of the permanent paving will be regarded as a trial section for the purpose of assessing the Contractor's ability to produce a paving that complies with the applicable requirements of the specification.

Full scale paving unit laying shall not commence until the trial section has been laid by the Contractor and approved by the Engineer. Subsequent laying operations shall be carried out using materials of at least the same quality and with the same standard of workmanship as in the approved trial section.

The Contractor shall remove, at his own expense, any trial section that is not approved.

PSMJ 7.3 SUBBASE, FORMATION AND OTHER FOUNDATION LAYERS

.The subbase, formation and other foundation layers shall be subjected to testing in terms of SABS 12C0 DM and SABS 1200 ME, as applicable.

PSMJ 7.4 BLOCKS

PSMJ 7.4.1 Wet Strength Test.

The relevant test given in SABS 1058a) shell be used to determine whether blocks comply with the requirements for wet strength given in 3.1.

PSMJ 7.4.2 Other Tests.

Blocks shall be subjected to such other tests as are given in SABS 1058a) and in **precast concrete paving blocks: Specification'**).

PSMJ 7.5 CONCRETE FOR GAP FILLING.

The concrete used for gap filling shall be subjected to testing in accordance with SABS 1200 G or SABS 1200 GA, as applicable.

PSMJ 7.6 KERBS, CHANNELS AND OTHER DEVICES.

Kerbs, channels and other devices used for edge restraints shall be subjected to testing in accordance with SAW 1200 MK.

PSMJ 7.7 PONDING.

Where the Engineer is of the opinion that, notwithstanding compliance by the Contractor with the requirements of 5.1.1.3, ponding may occur on the finished surface, the Engineer may order the whole or any part(s) of the surface to be flooded with water to determine whether ponding will occur.

Rectification of areas where pounding is found to occur shall be carried out by the Contractor at his own expense.

If ponding does not occurred the Employer shall bear the cost of the test.

PSMJ 8 MEASUREMENT AND PAYMENT

PSMJ 8.1 PRINCIPLES.

Preparation, including trimming to the designated level of the top of the subbase as specified in.5.1, and all other work necessary in terms of 5.1 carried out before the layer of bedding sand is placed and paving is laid, will be measured and paid for in terms of Clause 8 of SABS 1200 D or SABS 1200

DA, SABS 1200 DM and SABS 1200 ME, as applicable. Construction above the designated level of the top of the subbase (see 5.1) will be measured and paid for under items scheduled in terms of 8.2.

PSMJ 8.2 SCHEDIJLED ITEMS

PSMJ 8.2.1 Provision of Edge Restraints ..... Unit: m

The length measured will be that of the outside perimeter of the paving units as shown on the drawings. Separate items as specified in Clause 8 of SABS 1200 MK will be scheduled, and the terms of SABS 1200 MK shall apply.

PSMJ 8.2.2 Construction of Paving Complete ..... Unit: m ²

Separate items will be scheduled for each t-y-p e of material, class and shall of unit, depth of paving, type of laying bond and, if applicable, colour (or mixture of colours).

The area measured will be that to be paved as shown on the drawings.

The rate shall cover the cost of supplying units and sand, placing the bedding layer, laying the units, compacting the pavement, filling gaps, filling joints, locking up the pavement (when relevant) and removing excess sand.

PSMJ 8.2.3 Cutting Units to Fit Edge Restraints ..... Unit: m

Separate items will be scheduled for straight, raking and circular cutting. The length measured will be the length of that part of the edge restraint where it is necessary to cut the units to fit.

The rate shall cover the cost of cutting, waste of material, delays and disruption of the program.

PSMJ 8.2.4 Rolling to Locked-up Condition as Specified in 5.6.2 (Provisional) ..... Unit: m ²

Applicable only where rolling is required in terms of 5.6.2. m ²

The rate shall cover the costs of-complying with 5.6.2 that are additional to the costs covered by 8.2.2.

PSMJ 8.2.5 Trial Section, not Part of Permanent Work (Size stated) (Prov.isiona1) …Unit: Sum or m

Applicable only where a trial section is ordered and is found to be acceptable but does not form part of the works measured under 8.2.2.

The rate shall cover all the costs enumerated in 8.2.2 together with the cost of obtaining

PSMK: KERBING AND CHANNELLING (SABS 1200 MK 1983)

PSMK 1 SCOPE

This specification covers the construction of mountable, semi-mountable, and barrier kerbing and channelling, as well as edging and chutes, that are precast or cast in situ by conventional methods or extruded in situ by means of special plant.

NOTE: The standards referred to in the specification are listed in Appendix A.

PSMK 3 MATERIALS

PSMK 3.1 CONCRETE.

All concrete work shall be carried out in accordance with the requirements of SABS 1200 G or SABS 1200 GA, as applicable.

PSMK 3.2 PRECAST KERBING AND CHANNELLING

PSMK 3.2.1 General.

Except where different cross-sectional shapes and dimensions are required in terms of the project specification or drawings and are so scheduled to match existing styles, precast kerbs and channels shall comply with the requirements of SABS 927 for quality and shape, shall be of the type and figure scheduled or given on the drawings, and shall be of nominal length not greater than 1 m.

Short lengths that are required as closures shall be specially cast or saw-cut to the required length.

Broken lengths shall not be used.

PSMK 3.2.2 Curved Kerbing

Kerbing of radius 1 m and less shall be cast in situ. Units for curved kerbing of radius greater than 1 m shall have the following nominal lengths:

Radius, m	**Nominal length of unit, m**
Over	**Up to and including**

1	4	0.3
4	20	0.5
20	-	1

PSMK 3.2.3 Strength.

Precast kerbs and channels shall be so manufactured that the transverse strength of each unit complies with the requirements of SABS 927 and, when a unit is fractured, the broken surface shall present a clean, homogeneous appearance.

PSMK 3.2.4 Approval.

Samples of units shall be submitted in terms of Subclause 3.1 of SABS 1200 A or Subclause 3.1 of SABS 1200 M, as applicable, for approval before construction is started. Units that are of a lower standard than the approved samples may be rejected.

PSMK 3.3 CAST-IN-SITU CONCRETE FOR CURVES OF RADIUS LESS THAN 1 m

Cast-in-situ concrete shall comply with the relevant requirements of 3.2.1 and 3.2.3.

PSMK 3.4 BRICK-ON-EDGE KERBING.

Bricks for brick-on-edge kerbing shall comply with the relevant requirements of SABS 227a) for solid Type E face bricks of approved colour and texture and shall have a compressive strength of at least 25 MPa.

PSMK 3.5 EXPANSION JOINT SEALANT.

Sealant for expansion joints in kerbing shall comply with the relevant requirements of SABS 110.

Sealant for expansion joints in channelling shall comply with the relevant requirements of BS 2499.

PSMK 3.6 MORTAR.

Mortar shall consist of a 1:3 cement/sand mix.

The cement and sand shall comply with 3.7.1(a) and (b) respectively

PSMK 3.7 CONCRETE FOR EXTRUDED-IN-SITU KERBING AND CHANNELLING

PSMK 3.7.1 Materials for Concrete.

The materials used for concrete for machine placed (extruded) kerbing and channelling shall comply with the following requirements:

a) Cement shall be ordinary portland cement or rapid-hardening portland cement complying with the relevant requirements of SABS 471, and free from deterioration.

b) Sand shall comply with the relevant requirements of SABS 1083. Its grading shall be such that easy and smooth extrusion of dense concrete is ensured.

c) Stone shall comply with the relevant requirements of SABS 1003 for concrete stone of nominal size 13,2 mm.

d) Water shall be of drinking quality unless samples of water from sources that are not of such quality have been approved by the Engineer.

PSMK 3.7.2 Concrete.

Unless otherwise specified in the project specification, concrete shall comply with SABS 1200 G or SABS 1200 GA, as applicable, for strength concrete of Grade 25.

PSMK 3.8 CURING COMPOUND

.Where use of a curing compound is approved by the Engineer in terms of 5.8.5; the compound shall comply with the relevant requirements of ASTM C 309.

PSMK 3.9 BEDDING MATERIAL

.The material on which precast concrete kerbs and channels are bedded, shall consist of crushed stone, cinders, slag, sand, or other approved porous material having a maximum particle size of 13.2 mm.

PSMK 4 PLANT

PSMK 4.1 EQUIPMENT FOR MACHINE PLACING.

The Contractor may use any approved machine that is capable of placing in one continuous operation by means of slipforms, cast-in-situ kerbs and channels that have at least the same standard of finished appearance and line as can be obtained by the methods specified in 5.4 and with joints at the intervals specified in 5.4.

In order to ensure that the above requirements are met

a) the machine shall be equipped with one or more automatic sensing devices that control the height, direction' and cross level of the machine;

b) the height control device shall be calibrated to ensure that the correct level of kerbing or channelling, as relevant, is maintained;

c) where a machine operates on a ram-propulsion system, the machine shall be fitted with adequate brakes to ensure full compaction, particularly on downgrades; and

d) sufficient hand tools shall be provided to ensure that the finish of the kerbing or channelling, as relevant, is within the applicable of the tolerances specified in Clause 6.

PSMK 5 CONSTRUCTION

PSMK 5.1 EXCAVATION AND BEDDING.

Trenching for kerbing and channelling shall be excavated to the required depth and all unsuitable material shall be removed and replaced with a layer of approved bedding material (see 3.9) of thickness at least 70 mm. The bedding shall be compacted and accurately shaped to the required grade.

Excavations for open drains shall be so trimmed to the lines and levels given on the drawings as to permit accurate construction of the concrete linings. of at least 90 % of modified aashto maximum density and no

concrete shall be placed on uncompacted or disturbed material where, in the opinion of the Engineer, the in-situ material is unsuitable, the Engineer may order that it be removed to the depth required and replaced with selected material compacted to a density of at least 90 % of modified aashto maximum density.

Excavations for chutes shall be neatly trimmed. of modified aashto maximum density and where overbreak occurs in hard material, the excavations shall be backfilled with well punned Grade 15 concrete. If so required by the Engineer, the excavations shall be taken deeper to accommodate a concrete screed cast to act as a working platform for the construction of the chutes.

PSMK 5.2 PRECAST CONCRETE KERBING AND CHANNELLING

Precast concrete kerbs and channels shall be laid and bedded on a 50 mm thick layer of bedding material that complies with 3.9, placed on the compacted subbase or other formation layer to suit the designated levels of the finished road. The kerbs and channels shall be laid with close joints (of thickness not exceeding 10 mm) of 3.1 sand: cement mortar on the ends, and neatly pointed with a pointing trowel. The ends of the units shall be well moistened before jointing and the joints shall be covered and kept moist for at least 48 h after jointing.

Provision shall he made for expansion joints of width at least 12 mm at intervals not exceeding 20 m, and after the concrete has been allowed to dry thoroughly, the concrete surfaces shall be primed, and the joints filled with a sealant (see 3.5).

After the grouting of kerb joints has been completed, the kerbs shall be backed with well-punned concrete of specified strength 15 MPa and the space behind the backing shall be backfilled as specified in 5.9.

PSMK 5.3 PRECAST CONCRETE CHUTES ON SIDE SLOPES OF FILLS AND CUTS.

Precast concrete chutes shall be manufactured in accordance with the dimensions shown on the drawings, and the units shall fit neatly into each other as shown on the drawings.

The bottom unit, that is, the unit at the toe of the fill or at the bottom of the cut slope, shall rest against the outlet structure or footing as shown on the drawings.

The units shall be neatly laid to line and grade from the bottom up so that each consecutive unit fits neatly into the previous one.

A transition section shall be constructed in situ at the inlet, as shown on the drawings, to lead the water into the chute.

PSMK 5.4 CAST-IN-SITU CONCRETE KERBING AND CHANNELLING.

Kerbing and channelling shall be cast in alternate sections. Except where shorter sections are necessary for closures or where otherwise shown on the drawings or required by the Engineer, the lengths of sections shall be uniform throughout and equal to 2 m for every 100 mm average thickness OK depth of concrete measured perpendicular to the bed.

Joints between adjacent sections shall be truly perpendicular to the surface of the concrete and at right angles to the edge of the road.

After concrete has been placed in the forms, it shall be tamped and spaded until mortar entirely covers the exposed faces. Exposed faces shall then be finished to smooth and even surfaces and edges shall be rounded to the radii shown on the drawings.

Forms shall not, within a period of 24 h after concrete has been placed, be removed from concrete surfaces that will be exposed. Minor defects shall be repaired with a 2:l sand: cement mortar.

Plastering will not be permitted on exposed faces and all rejected portions shall be removed and replaced at the Contractor's expense rubbing the surfaces with a soft brick or a wooden block that is kept wet, until they are smooth . After the concrete has been rubbed smooth it shall be rubbed with a thin paste of 1:l sand: cement mortar Until a uniform colour is obtained. When completed, the sections shall be cured as specified in SABS 1200 G or SABS 1200 GA, as applicable.

After the concrete in the alternate sections has set, the exposed end surfaces shall be painted with a coat of an approved bitumjnous emulsion containing 60 % (m/m) of bitumen, and the emulsion shall be allowed to set and dry. off in accordance with the applicable requirements given above.

Guide lines and straight edges shall be used to ensure that the exposed faces of kerbing and channelling are formed true to line and level.

PSMK 5.5 CAST-IN-SITU CONCRETE CHUTES ON SIDE SLOPES OF FILLS AND CUTS.

Cast-in-situ concrete chutes on side slopes of fills and cuts together with the inlet and outlet structures, shall be constructed in accordance with the drawings required by the Engineer, a concrete screed shall first be cast in excavations that cannot be accurately trimmed. The screed shall be accurately finished to the level of the underside of the chute invert slab and allowed to set before the invert slab is cast. accurately trimmed, or where chute sides have to extend above the surface of cut slopes, the outer faces of the sides shall be cast against formwork.

PSMK 5.6 CONCRETE-LINED OPEN DRAINS

.Where so specified in the project specification and scheduled, the surfaces on which a concrete lining is to be cast shall, after being trimmed, be covered with a sprayed bitumen emulsion primer or polyethylene sheeting of nominal thickness 0,25 mm, all joints in the sheeting being overlapped at least 150mm.sheeting (as relevant) during the placing of reinforcement and during concreting.

Joints in concrete shall be sealed and shall comply with the relevant requirements given in the project specification or on the drawings, or both. The lining shall be cast in alternate panels and, after the concrete in the alternate panels has set, the exposed end surfaces shall be painted with bituminous emulsion as specified in 5.4 for kerbing, channelling, and edging, before the intermediate slabs are cast.

The exposed surfaces of the concrete linings of open drains shall be given a woodfloat surface finish and the concrete shall be cured as specified in SABS 1200 G or SABS 1200 GA, as applicable.

PSMK 5.7 BRICK-ON-EDGE KERBING.

Except that the width of joints shall not exceed 12 mm, brick-on-edge kerbing shall be laid and bedded in the manner specified in 5.2, and in such a way that the upper surface is flush with the surface of the sidewalk.

The intermediate sections shall then be cast and the exposed surfaces finished

The grade of concrete shall be as indicated on the drawings. If so

Where the material being excavated cannot be

Care shall be taken not to damage the bitumen layer or the polyethylene

PSMK 5.8 MACHINE PLACED (EXTRUDED) KERBING AND CHANNELLING

PSMK 5.8.1 Type of Construction.

Extruded concrete kerbing and channelling shall be constructed to the profile detailed on the drawing, by means of machines that comply with 4.1, and using materials that comply with 3.7.

PSMK 5.8.2 Weather Limitations.

Extruded concrete kerbing and channelling shall not be placed :

a) while rain is falling or when it is likely that rain will fall:

b) when the air temperature is at or below 5°C or if , in the opinion of the Engineer, the air temperature is likely to drop below 5

c) when the temperature is above 40°C on a calm day or above 30 approved precautions against drying out are taken.

PSMK 5.8.3 Subbase Preparation.

The width of the subbase shall extend at least 500 mm beyond the front- face of the kerbing or beyond the inside edge of the channelling, as relevant, and shall be sufficient to allow the kerbing/channelling

After the subbase has been finished true to line and level, the foundation for the kerbing or channelling, or both, shall be excavated accurately so that there is a clearance of at least 10 mm between the underside of the kerb or channel mould and the subbase. Irregularities in the true line and level of the subbase shall be rectified with concrete supplied and laid by the Contractor at his own expense.

A sufficient number of pegs shall be inserted by the Contractor to ensure that the finished kerbing or channelling, as relevant, is true to line and level.

PSMK 5.8.4 Kerbing Operation.

No concrete shall be placed until the length of Subbase prepared has been inspected by the Engineer and approved.

Concrete shall be deposited in the machine as quickly as possible after mixing, and placed and compacted or vibrated by proper tools or apparatus to ensure proper compaction and shape after placing, and to ensure that a minimum of air is retained in the concrete.

Once concrete has been placed it shall not be disturbed. The placing of concrete shall be carried out as continuously as possible in order to avoid unnecessary joints.

When concrete placing is to be interrupted long enough for an initial set to take place, an open expansion joint of width at least 5 mm shall be formed at that point as a clear cut through the section.

The final finished surface shall be steel floated and free of honeycombing and other imperfections. All concrete that cannot be placed shall be removed from the Site.

Gaps of width 5 - 10 mm shall be cut into the wet concrete at intervals not greater than 2 m on straights and curves of radius greater than 20 m. The gaps shall be cut on the exposed faces and approximately 80% through the concrete section. On curves of radius greater than 4 m but not greater than 20 m, gaps

shall be cut at intervals not greater than 900 mm, and on curves of radius 2 - 4 m at intervals not greater than 600 mm.

PSMK 5.8.5 Curing.

Curing of concrete kerbing and channelling shall commence as soon as the concrete has hardened sufficiently to ensure that the surface will not be marked or stained in any way.

Unless otherwise authorised by the Engineer, curing shall be carried out continuously for 7 d. shall be done either by covering the exposed surfaces of the concrete with sand or cotton or jute mats, the sand or mats being kept continuously wet, or, where approved by the Engineer, by the application of a single coat of liquid membrane-forming curing compound (see 3.8).

PSMK 5.9 BACKFILLTNG.

After the concrete work specified in the applicable of 5.2-5.8 has been completed, the spaces shall be backfilled with approved material to pavement or shoulder level, as applicable. Such backfill shall be placed in layers not exceeding 150 mm and each layer shall be watered and thoroughly compacted to at least 90 % of modified aashto maximum density, before the next succeeding layer is placed.

In the case of kerbs, except where they are constructed in cut, the compacted backfill shall extend for a distance of 0.5 m behind the kerb face.

Where kerbs and channels are laid after construction of the base, the spaces between the concrete and adjoining base shall be backfilled with premixed bituminous material.

In the case of chutes, the compacted backfill shall be level with the side slope.

PSMK 5.10 PROTECTION

Care shall he taken during transporting and laying to protect all precast units against chipping and breakage. Broken or badly chipped sections shall not be used and shall be removed from the Site and replaced with undamaged units.

Concrete kerbing and channelling as well as other structures adjacent to the road shall be protected from discoloration when bitumen is being sprayed or asphalt is being placed. Where bitumen is to be sprayed, all kerbing and channelling shall he completely covered with polyethylene sheeting of thickness at least 0.25 mm or with other acceptable sheeting and anchored with stones and sand to prevent the sheeting from lifting during windy conditions

Work that has become discoloured by bitumen shall be broken down and replaced, unless all such bitumen is so removed that no discoloration is visible. Painting over discoloured sections will not be acceptable.

PSMK 5.11 TRANSITION SECTIONS AND INLET AND OUTLET STRUCTURES

Transition sections of kerbing, kerbing channelling combinations, and concrete-lined channels shall, as far as is practicable, be constructed to the same standards and using the same methods specified for uniform sections. or cast-in-situ units.

Inlet and outlet structures may be of precast or partially precast concrete units or they may be of cast-in-situ concrete. Components such as grids, covers, and frames shall comply with the details shown on the drawings and with the requirements of the project specification.

PSMK 5.12 KERBSIDE STORMWATER CATCHPITS AND INLETS

The relevant requirements of SABS 1200 LE shall apply to stormwater catch pits and inlets.

PSMK 6 TOLERANCES

PSMK 6.1 CONCRETE'KERBING AND CHANNELLING

Concrete kerbing and channelling shall be so constructed as to present straight lines and smooth curves that are acceptable to the Engineer and the dimensions and alignments shall be within the following tolerances:

a) Horizontal alignment

1. Deviation of any edge, centreline, or vertical surface from specified position .....±25

2. Deviation of any edge, centreline, or vertical surface from specified alignment, when taken over any section of length exceeding 10 m ……±1 in 500

b) Vert.ica1 alignment and level

1. Deviation of inside edge of channelling from designated finished road level ..... ±10

2 Deviation of invert level of each channel and drain and top of kerbing from required level, subject to there being no adverse grade ..... ±10

c) Trueness of straight exposed surfaces

Surface irregularities, when tested with a 3 m straight edge ±6

d) Cross-sectional dimensions

Cross-sectional dimensions related to specified dimensions (except that the underside of channelling may extend up to 25 mm below the level at which it would have the required thickness) ……..... ±6

PSMK 7 TESTING

PSMK 7.1 PRECAST KERBS.

The Engineer may order any precast kerb units that have been delivered or installed and that do not appear to him to be of the same quality as the approved samples (see 3.21, to be inspected and tested in accordance with SABS 927.

PSMK 7.2 CAST-IN-SITU AND EXTRUDED KERBING AND CHANNELLING

PSMK 7.2.1 General Test.

During the casting or extruding of kerbing or channelling, the Engineer may order the Contractor to place a 1, 5 m length of bond breaker (such as plastics sheeting) immediately ahead of the work, and to make joints in such a way that a 1 m length of the selected length of kerb or channel may be cut as specified in 5.8.4 for testing (after the curing of the relevant section of kerbing or channelling

PSMK 7.2.2 Alternative Tests

PSMK 7.2.2.2 The Engineer may vary the method of testing in successive 1000 m lengths by ordering, in lieu of transverse strength tests, cube or core crushing tests as specified in 7.2.2.1.

PSMK 7.2.2.3 Cubes shall be made with concrete taken from the mixer or from any part of the work, as ordered. Cores shall be taken from the cast or extruded kerbs or channels and tested in accordance with SABS Method 865.

If, after a set of three cubes or cores has been tested in an approved laboratory, the average crushing strength is found to be less than 22 MPa (i.e. less than 25-3 MPa) the concrete work represented by the cubes or cores will be rejected.

PSMK 7.3 RESPONSIBILITY FOR COSTS OF TESTING, ETC

.In the case of tests carried out in terms of 7.1 or 7.2. as applicable, the cost of preparing test specimens, testing, and making good shall be borne

a) by the Contractor if the results of the test show that the material represented by the test sample does not comply with the requirements of the specification; and

b) by the Employer if the results of the test show that the said material complies with the said requirements.

PSMK 8 MEASUREMENT AND PAYMENT

PSMK 8.1 BASIC PRINCIPLES

Each type, shape, and size of kerb and channel will be measured linearly along the face. will be made for catch pits, etc.

Separate items will be scheduled according to sizes, ranges of radii, and types of bedding.

The rates shall cover the cost of all operations necessary to complete the item scheduled.

PSMK 8.2 SCHEDULED ITERM

PSMK 8.2.2 Concrete Kerbing and Channelling Combined

(Grade of concrete indicated for cast-in-situ concrete and type and figure or drawing number stated) ..... Unit: m

a) Straight and curved kerbing and channelling will be measured separately in the categories set out in 3.2.

b) The rate shall cover the cost of all the applicable operations specified in 8.2.1(b), (c), and (e).

PSMK 8.2.7 Trimming of Excavations for Concrete-Lined Open Drains in

a) Soft material ……Unit: m

b) Intermediate material ……..Unit: m

c) Hard material ..... Unit: m

The area measured will be the plan area of the surface of the excavation trimmed to receive concrete.

The rate shall cover the cost of all labour, plant, materials, and other incidentals necessary to trim excavations for open drains to the standard of finish required for the construction of concrete linings.

All excavation, including the removal of unsuitable ground and backfilling with suitable material, will be measured as stated for the relevant items of SABS 1200 D or SABS 1200 DA, as applicable. will distinguish between trimming in soft material and trimming in hard material as defined in SABS 1200 D or SABS 1200 DA, as applicable. gravel backfilling, additional concrete, or mass concrete backfilling required because of overbreak or unavoidable unevenness of the excavations in difficult ground, and the cost thereof shall be covered by the rate for trimming.

PSMK 8.2.8 **Cast-In-situ Concrete Lining to Open Drains** (concrete grade and type of drain stated) ... Unit: m

Measurement and payment for concrete will be as specified in SABS 1200 G or SABS 1200 GA, as applicable, but the rate shall also cover the painting of open joint surfaces where so specified.

PSMK 8.2.9 **Formwork to Cast-In-Situ Concrete Lining of Open Drains** (smooth surface finish)

a) To sides with formwork on the internal face only..... Unit: m2

b) To sides with formwork on both internal and external faces (each face measured)……. Unit: m²²

c) To ends of slabs ..... Unit: m²

Measurement and payment for formwork will be as specified in SABS 1200 G or SABS 1200 GA, as applicable.

Formwork under item (a) above will be measured and paid for only if the side slope of the slabs is steeper than 1 vertical to 2 horizontal and the slabs cannot be constructed without formwork even when a stiff concrete mix is used. Should the Contractor elect to use precast side slabs, payment will be made for formwork as if cast-in-situ concrete had been used.

PSMK 8.2.12 **Steel Reinforcement ..... Unit: t**

Measurement and payment will be in accordance with the provisions of SABS 1200 G or SABS 1200 GA, as applicable.

PSW: BUILDING WORK

PSW 1 **SCOPE**

This specification covers the supply of material and the construction of brickwork, waterproofing, tiling, plumbing and drainage and described on the drawings and in the bill of quantities.

PSW 1.1 GENERAL

PSW 1.1.1 **SABS Specifications and codes of practice**

Reference in this document to South African Bureau of Standards specifications and codes of practice shall be deemed to be references to the latest issues of such specifications and codes, as maybe amended from time to time. Where possible, all articles, material or items described as conforming to the SABS specifications must bear the SABS mark.

PSW 1.2 MANUFACTURERS' INSTRUCTIONS

Unless the Engineer otherwise directs, all materials shall be used, mixed, applied, fixed, etc. strictly in accordance with their manufacturers' printed instructions.

PSW 1.3 MATERIALS AND WORKMANSHIP

Materials shall be of the best quality and all work shall be done well and to the entire satisfaction of the Engineer who shall inspect the works.

The terms "approved" and "directed" shall mean the approval and direction of or by the Engineer.

PSW 1.4 SAMPLES

The contractor shall furnish without delay such samples as may be called for by the Engineer, who may reject all materials and workmanship not corresponding with the approved samples.

PSW 1.5 HANDING OVER

Rates shall include for protecting finishings, facing material, components, fittings, equipment, etc., from staining or damage, and for handing over the works including any existing structures etc., affected by the works, in a clean and perfect state to the satisfaction of the Engineer.

PSW 2 EARTHWORKS

See SABS 1200 DA and PSDA clauses.

PSW 3 ANTPOISONING

The poisoning of ground against termites must be executed with poison in accordance with SABS 1164 or 1165.

The poisoning of filling or ground surfaces under all floors s to be done as soon as practicable and must be carried out in strict accordance with the South African Bureau of Standards Code of Practice 0124.

The contractor will not be permitted to make his own mixture.

PSW 4 CONCRETE, FORMWORK AND REINFORCEMENT

See SABS 1200 GB and PSGB clauses.

PSW 5 BRICKWORK

PSW 5.1 CEMENT

Cement shall be as described in PSGB and shall be of normal setting quality.

PSW 5.2 SAND

Sand shall be clean pit of other approved sand, free from soft particles, clay, animal or vegetable matter, washed where necessary, and screened through a 2.4mm mesh sieve.

PSW 5.3 CEMENT MORTAR

Cement mortar, unless otherwise specified, shall be composed of 1 part by volume of cement and 5 parts by volume of sand.

The material shall be missed dry until of uniform colour, then water added and the mixture turned over until the ingredients are thoroughly incorporated.

Cement mortar shall be produced in such quantities as can be used before commencing to set, as no cement mortar that has once commenced to set shall be used in any way.

Care shall be taken in mixing cement mortar to remove from the mixing-machine or platform any old mortar that has already set, as such mortar shall not be incorporated in any new batch.

PSW 5.4 BURNT CLAY BRICKS

Burnt clay bricks shall comply with the requirements of SABS Specification 227.

Selected extra hard burnt bricks shall be used for foundations and lintels.

Bricks intended for fair face work shall be burnt clay bricks complying with the requirements of the SABS specification for "General Purpose (Special)" bricks and are to be selected for their uniformity of dimension and shape.

Facing bricks shall be burnt clay bricks of the colour and texture specified and shall comply with t he requirements of the SABS specification for facing bricks. The bricks shall exhibit a liability to efflorescence not in excess of "slight" and water absorption when tested in conformity with the requirements of the SABS Specification shall not exceed 20 percent. Particular care shall be taken to preserve arises and faxes of these bricks during transit and handling.

All bricks shall be equal in all respect to the samples which the contractor shall submit for approval before the contract is signed.

PSW 5.5 BRICKWORK

Brickwork, wherever practicable and not otherwise specified, shall be built in stretcher bond. No false headers shall be used, and none but whole bricks employed, except where legitimately required to form bond.

The brickwork, unless otherwise specified, shall be built in cement mortar.

The bricks shall be laid on a solid bed of mortar and all joints thoroughly grouted up solid throughout the whole width of each course.

The brickwork shall be carried up in a uniform manner, no one portion being raised more than 1,2m above another at one time.

The bricks shall e well saturated with water, in the stack or dump, approximately 2 hours before being used. The tops of wall left off shall be well wetted before work is recommenced.

All necessary openings for pipes, etc., shall be formed or left and made good after pipes etc., have been fixed in position.

Where indicated, walls shall be taken up two courses above paneled ceilings in the same mortar as the wall below and cut between ties.

PSW 5.6 WIRE TIES

Wire ties shall be of either the single wire type or the Modified P.W.D. type galvanized steel wire ties with a minimum diameter of 2,8mm and shall comply with the requirements of SABS 28, spaced not more than 1m apart alternately to every third course of brickwork and shall be of sufficient length to allow not less than 75mm of each end to be built into brickwork.

PSW 5.7 BRICKWORK IN THICKNESSES

Walls build in two or three thicknesses shall be tied together with and include wire ties as specified above.

PSW 5.12 BRICKWORK REINFORCEMENT

(In the widths 50, 75, 150 and 20mm)

Brickwork reinforcing mesh shall be of hard-drawn steel comprising two main wires, each with a diameter of 3,55mm, spaced 50, 75, 150 or 230mm apart for general wallings and 75mm apart for brick lintels, and cross wires, each with a diameter of 2,8mm, spaced not more than 300mm apart, welded to the main wires.

The reinforcing wires and rods shall be cut to lengths as required, lapped at least 150mm at end joints, and for a length equal to the width of the widest reinforcing mesh at angle intersections, be evenly spaced in the brick joints, with the outer wires or rods having at least a 20mm cover from face of brickwork.

PSW 6 WATERPROOFING

PSW 6.1 DAMP-PROOF COUSE

The horizontal damp-proof course, unless otherwise specified, shall be of bituminous sheeting complying with the requirements of

a) SABS Specifications 248 as Type GH or Type FV sheeting specified therein, or

b) SABS Specification 92 as Type 140 sheeting specified therein;

or, alternatively, shall be of polyethylene sheeting containing approximately 2,5 % by mass of even-dispersed carbon black, and shall have plain surfaces and a thickness of at least 0,45mm or embossed surfaces and a mass of at least 0,34kg per square meter and a nominal thickness of 0,38mm as Type B complying with SABS Specifications 952.

The damp-proof course shall be the full width of superstructure walls and shall be laid without longitudinal joints. At end joints, angles and intermediate junctions the sheeting shall be lapped 150mm.

Laps in damp-proof sheeting shall be sealed with approved bituminous solutions applied over the whole area of the lap.

Care shall be taken not to tear or otherwise damage the sheeting.

PSW 13 PLUMBING AND DRAINAGE

PSW 13.1 REGISTERED PLUMBERS/DRAINLAYERS

Only registered plumbers and/or drainlayers shall be employed on any plumbing and/or drainage work.

PSW 13.3 PIPES AND FITTINGS

Pipes and fittings shall comply with the following specification and requirements:

Pipes and Fittings	Specifications	Class or Type
PSW 13.3.1	Steel pipes and fittings up to 150mm nominal bore and suitable for screwing to ISO R7 pipe threads	SABS 62 Medium class galvanized
PSW 13.3.2	Vitrified clay sewer pipes and fittings	SABS 559 -
PSW 13.3.3	Cast iron pipes and fittings for use above ground In drainage installations	SABS 764 Type B Pipes
PSW 13.3.4	Unplasticised polyvinyl chloride (uPVC) pipes and fittings for use under ground in drainage installations	SABS 791 Normal duty, integral socket types rubber ring joint type
PSW 13.3.5	Unplasticised polyvinyl chloride (uPVC) pressure Pipes and fittings for cold water supply	SABS 966 -
PSW 13.3.6	Unplasticised polyvinyl chloride (uPVC) pipes	SABS 967 -

	and fittings for use above ground in drainage installations		
PSW 13.3.7	Lead pipes	BS 602	-
PSW 13.3.8	Brass fittings shall be solid cast brass with smooth even bore	-	-

PSW 13.5 FIXING OF PIPES

Pipes shall be fixed as follows:

PSW 13.5.1	Galvanised mild steel (except those stated in PSW 13.4.2)	To walls with galvanized mild steel brackets (school board pattern) for pipes up to 80mm diameter and with galvanized cast iron hinger holderbats with brass pins or bolts for pipes more than 80mm diameter; both types with tails cut and pinned in 1:3 cement mortar.
		To woodwork with screw-on type galvanized mild steel Clips
PSW 13.5.2	Cast iron and galvanized mild steel for Soil, waste and vent pipes	To walls with hinged cast iron holderbats with brass bolts and with tails cut and pinned in 1:3 cement mortar
		To woodwork with screw-on type galvanized mild steel clips
PSW 13.5.3	Polyethylene and unplasticised poly-vinyl chloride	To walls, woodwork, etc with patented PVC finished steel clips and holderbats as supplied by the manufacturer of the pipes and fixed in accordance with SABS 0112

PSW 13.5.4 Descriptions of cutting chases for pipes in concrete, brickwork, etc. shall be deemed to include for making good in 1:3 cement mortar after the pipes have been fixed.

PSW 13.6 PIPES CAST IN OR BUILT IN

Where pipes are described as “cast into concrete” or “built into brickwork” the pipework shall be done as the work proceeds. Descriptions of pipes built into brickwork shall be deemed to include for necessary cutting.

PSW 13.7 PIPES LAID IN GROUND

Descriptions of pipes laid in ground shall be deemed to include for excavation.

PSW 13.7.1 Water pipes

Water pipes, gas pipes, etc. laid in ground shall be at least 400mm deep below the finished surface.

PSW 13.7.2 Drain pipes

Polyethylene and unplasticised polyvinyl chloride drain pipes shall be laid in accordance with SABS 0112 and all other drain pipes in accordance with SABS 058 (Class D beds). The undermentioned requirements shall in addition also be applicable to the laying of drain pipes.

Soft of loose patches in drain trenches as well as excavations taken out too deep shall be filled in with selected soil and rammed.

Descriptions of drain pipes in ground shall, if required by local regulations, be deemed to include for laying barrels of pipes or part thereof on concrete bedding in accordance with SABS 058 (Class A beds).

Backfilling to sides and up to 300mm above plastic pipes shall be free from stone or hard substances which will not pass a 10mm mesh.

PSW 13.8 PIPING

Descriptions of piping shall be deemed to include for short lengths, cutting, jointing, running joint and fixing. Descriptions of channels, drains, discharge pipes, etc. shall in addition be deemed to include for fixing and/or laying to even falls.

PSW 13.9 TRAPS

Descriptions of traps shall be deemed to include for inspection eyes, jointing to pipes and integral overflow pipes where required.

PSW 13.9.1 Polyethylene traps

Wall thickness shall not be less than tabled below:

Diameter of trap (mm)	Wall thickness (mm)
32	2,24
40	2,24
50	2,50

PSW 13.11 CLEANING EYES

Cleaning eyes shall consist of cast iron frames and lids with letters “CE” (or “SO) cast in lids. The lids shall be set in tallow and secured with non-ferous metal screws. Frames shall be jointed with 1:2 cement in concrete taken up to ground level finished on exposed faxes with 1:3 cement plaster with angles rounded and fitted with 300 x 300mm standard removable cast iron cover and frame, with the frame cast in concrete.

PSW 13.12 CONCRETE ENCASING

Concrete encasing for pipes, bends, traps, gulleys, grease traps, etc. shall be not less tan 100mm thick at any point.

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4.2 Variations and Additional Clauses to the Standard and Particular Specifications

The following variations and additions to the Standard and Particular Specifications will be applicable to this Contract.

The various documents listed in Section 4.1 shall be treated as mutually explanatory. However, should any requirements of Section 4.1 conflict with any requirement in the Standardized Specifications or with any requirement of the Particular Specifications, then the requirements of Section 4.2 shall prevail.

The Contractor shall make suitable arrangements for process control prior to commencement with the Works. Should he intend using site personnel for this purpose he shall ensure that suitably trained and competent personnel take charge of the necessary test work, and that the necessary equipment is at their disposal prior to commencement of the Works. Failure to comply with these requirements shall be just cause for the Engineer to order suspension of the Works without additional remuneration in terms of Clause 5.11 of the Conditions of Contract (2010), or for him to recommend termination to the Employer in terms of Clause 9.2 thereof.

SECTION D: SMALL CONTRACTOR DEVELOPMENT, TRAINING AND COMMUNITY LIAISON

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This section covers construction aspects relating to the processes by which the construction industry develops emerging and established small contractors, preferably from the Target Area. It also deals with labour enhanced construction by encouraging the engagement and training of labour recruited from local communities.

Unless inconsistent with the context, in these specifications, the following terms, words or expressions shall have the meanings hereby assigned to them:

(i) Contract Participation

Contract Participation is a process by which the Employer implements Government's objectives by setting targets relating to small contractor development and labour enhancement which the Contractor shall achieve as a minimum.

(ii) Contract Participation Goal (CPG)

Contract Participation Goal is the monetary value of the targets set by the
Employer in the Contract Participation process.

(iii) Contract Participation Performance (CPP)

Contract Participation Performance is the measure of the Contractor's progress in achieving the CPG.

(iv) Labour

Labour is the Contractor's and Subcontractor's personnel whose monthly earnings are derived from hours worked for a fixed hourly rate which is adjusted from time to time by legislation (as a statutory minimum) and the Contractor's and Subcontractor's employment policies.

(v) Target Area

Target Area is a defined area from which the Contractor is expected to recruit Targeted Labour. The Target Area for this contract is as indicated in the Appendix to Tender.

(vi) Targeted Enterprise

An enterprise which:

a) is a contractor registered with the Construction Industry Development Board in a contractor grading designation from 2 to 7 and status as potentially emerging; and
b) the Contractor has no equity holding in; and is a sub-contractor who undertakes work within its registered CIDB category; and
c) is registered in terms of the Company's Act, 2008 (Act No. 71 of 2008) or Close Corporation Act, 1984 (Act No. 69 of 1984); and
e) is registered with the South African Revenue Service.

(vii) Target Groups

A Target Group is a specific section of the population who are South African citizens or have the legal right to work in South Africa and who are distinguished by gender, age or disability.

D1001 SCOPE

This section covers construction aspects relating to the processes by which the construction industry develops emerging and established small contractors, preferably from the Target Area. It also deals with labour enhanced construction by encouraging the engagement and training of labour recruited from local communities.

D1002 DEFINITIONS AND APPLICABLE LEGISLATION

(a) Definitions

Unless inconsistent with the context, in these specifications, the following terms, words or expressions shall have the meanings hereby assigned to them:

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Contract Participation is a process by which the Employer implements Government's objectives by setting targets relating to small contractor development and labour enhancement which the Contractor shall achieve as a minimum.

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e) is registered with the South African Revenue Service.

(vii) Target Groups

A Target Group is a specific section of the population who are South African citizens or have the legal right to work in South Africa and who are distinguished by gender, age or disability.
(viii) Targeted Labour

Targeted Labour is Labour recruited from the Target Area, who permanently resides in the Target Area or who are recognized as being residents of the Target Area on the basis of identification and association with and recognition by the residents of the Target Area.

(b) Applicable Legislation

The following Acts, as amended from time to time, are predominant amongst those which apply to the construction industry and are listed here for reference purposes only:

(i) The Constitution of South Africa;
(ii) Public Finance Management Act No. 1 of 1999;
(iii) Preferential Procurement Policy Framework Act No. 5 of 2000;
(iv) Construction Industry Development Board Act No. 38 of 2000;
(v) Broad-Based Black Economic Empowerment Act No. 53 of 2003.

D1003 CONTRACT PARTICIPATION

(a) Objective

A major objective of Government is to extend economic opportunities and entrepreneurial capacity to all localities by the optimum utilisation of the resources existing in the vicinity of projects, the development of these resources in the execution of the project, and by maximising the amount of project funds retained within the project locality. To this end, the contractor shall preferably recruit Targeted Enterprises from the Target Area.

(b) Contract Participation Targets

Contract participation is the process by which the Employer implements Government's objectives. The Employer sets targets for construction by specified entities the rand value for which is based on the services and work undertaken by the specified entities and measured as a percentage of the Contractor's final certified value of work completed (excluding VAT) measured at the date of issue of the Taking-over Certificate. The Contractor is obliged to commit to or exceed the targets stated in the Appendix to Tender. As far as it is practical, the Contractor should consider utilising small contractor resources from communities immediately adjacent to the contract before considering from wider areas.

(c) Contract Participation Goal (CPG)

The CPG is the monetary value of the targets set by the Employer and will be calculated as follows:

CPG = final contract value (excluding VAT) x (% Targeted Labour + % Targeted

Enterprise)

The final contract value is the total value of certified work measured at the date of issue of the Taking-Over Certificate.

(d) Contract Participation Performance (CPP)

The CPP is the monetary value of the Contractor's actual progress towards achievement of the CPG calculated as follows:

CPP = total value (excluding VAT) of Targeted Labour contribution + Targeted Enterprise contribution

The Contractor's participation performance will be measured monthly in order to monitor the extent to which he is striving to reach the CPG. The basis of monitoring shall be the levels of the individual contributions for Targeted Labour, Targeted Enterprises and Target Groups. Monthly returns, in the format provided by the Employer, are required from the Contractor and shall be submitted with each interim payment certificate.

To assist in the measurement of CPP the Contractor shall include in his contract programme details of how he will achieve the CPG. The detail shall be provided not later than 1 (one) month after the engineer has accepted the original construction programme and updated with every subsequent revision.

As an incentive to encourage the Contractor to exceed the CPG, a bonus is offered, measured as follows:

The bonus = 0.05 x (CPP – CPG) up to a maximum of R250 000.00.

Any bonus due (or portion thereof) shall be calculated on the final contract value. No bonus shall apply if either the Targeted Labour, Targeted Enterprises and/or any individual sub-targets for CIDB grading and/or Target Groups are not reached.

Conversely, failure to reach the CPG or any individual Target Group targets shall render the Contractor liable for a penalty as prescribed in clause 8.7 of the FIDIC Conditions of Contract. Penalties shall be calculated as follows:

Penalty = 0.5 x {[(0.4 x TL) + YL + WL] + [(0.6 x TE) + YE + WE]}

Where:
TL = Monetary value of the shortfall on the Targeted Labour target
YL = Monetary value of the shortfall on the Youth Labour target
WL = Monetary value of the shortfall on the Women Labour target
TE = Monetary value of the shortfall on the Targeted Enterprises target
YE = Monetary value of the shortfall on the Youth Owned companies target
WL = Monetary value of the shortfall on the Women Owned companies target

Where shortfall means the difference between the monetary value of the target less the monetary value of the actual achievement reached for the specific target.

It shall be monitored on a monthly basis and the penalty will be applied on the final contract value.

(e) Accredited Registration

CPP for Targeted Enterprises shall only be accepted if the respective Targeted Enterprises for which services or work is being claimed as having been performed, is registered with CIDB in one of the defined categories. In addition, documentary evidence that such Targeted Enterprises are registered with the South African

Revenue Services (SARS) shall be lodged with the engineer before the work or service may be considered as having been performed by a Targeted Enterprise. The responsibility for producing evidence of the respective registration documentation shall rest with the Contractor.

The Contractor shall assume responsibility for the compilation and maintenance of comprehensive records detailing each Targeted Enterprise progress during construction, starting from the award of a subcontract to a Targeted Enterprise until the successful completion of the subcontract work or termination of the subcontract. The Contractor may engage a small contractor who is not yet registered as a Targeted Enterprise and it then becomes a responsibility of the Contractor to assist with the registration process. If not successfully registered within the contract period, work completed by that small contractor shall not count towards CPP.

4.1 Contractor's General Obligations

Add the following sentence to the 1st paragraph:

"With regard to the Contractor's proposals submitted under the item of the Scope of Works entitled "Small Contractor Development, Training and Community Participation", if the Contractor fails to provide the employment or training to the extent proposed, the Employer may impose penalties as set out in the above-mentioned Scope of Works."

Add the following to the 2nd paragraph:

"Where necessary to maintain the rate of progress required by the programme, the Contractor shall assist a Targeted Enterprise Subcontractor employed as a condition of contract in buying, bringing to Site and storing on Site all Materials, Plant and equipment to be supplied by, or required for work to be done by, the Targeted Enterprise Subcontractor."

8.4 Extension of Time for Completion

Replace the word "Engineer" *with* "Employer" *in the last sentence of the last paragraph.*

8.7 Delay Damages

Change the marginal heading of this clause to read "Delay Damages and Other Non-compliance Charges" *and insert the following as a first paragraph to this clause:*

"Delay damages and other payments to the Employer for late delivery, failure to achieve intraprogramme due dates or non-compliance events shall apply as follows:"

Keep the existing two paragraphs unchanged as sub-clause (a) and add the following sub-clause relating to other non-compliance charges:

"(b) If the Contractor fails to achieve programmed completion dates that result in extended duration of accommodation of traffic closures, or fails to adhere to specified controls and targets,
penalties shall be levied by deductions from relevant Interim Payment Certificates in terms of sub-clause (f) of clause 14.3 [*Application for Interim Payment Certificates*] at the rates stated in the Appendix to Tender."

Add the following paragraph:

"If it is stipulated in the project specification that certain parts of the work must be completed within a specified period and if the Contractor fails to complete this part or parts of the work by the due date, a separate penalty as defined in the Appendix to Tender shall apply for each day the actual completion date for these specified items surpasses the due date"

10.2 Taking Over of Parts of the Works

Delete the 2nd paragraph.
Between the 3rd and 4th paragraphs insert the following paragraph:

"The Employer may make use of any part of the Permanent Works prior to the issue of a Taking Over Certificate."
Delete the 5th paragraph.

c) Legal and Contractual Requirements and responsibilities to the public
Add the following:

"Legislation imposes mutual obligations on the Employer and contractor in theperformance of their duties to society and to the built and natural environment. To assist the contractor in understanding and assessing his obligations, and thus to make allowances for the cost of compliance with this legislation, the following additional specifications are included in the project specifications:

(i) **Section C** of the Scope of Works contains the Environmental Management Plan (EMPl) for this project. Its provisions regulate the contractor's construction methods to ensure responsible conduct and treatment of the environment relevant to the project. Payment subitem 13.01(f) makes allowance for the contractor to price for environmental compliance duties as well as the duties of the Designated/dedicated Environmental Officer (DEO)
as prescribed in this section.

(ii) **Section D** of the Scope of Works contains provisions that regulate the contractor's construction methods for compliance with Government's initiatives towards black economic empowerment. It also contains information on criteria used in the procurement process. No separate payment mechanism has been made available for the contractor to allow for
his compliance with relevant black economic empowerment legislation. The contractor shall include such costs in the existing payment items under section B1303: Payment. However, non-compliance with the provisions of this section may lead to the imposition of penalties.

(iii) **Section E** of the Scope of Works contains the specifications that regulate the contractor's construction methods so far as to ensure health and safety of his employees and of the public. New payitem has been made available under this section to allow the contractor to make separate provision for the cost of health and safety measures during the construction process."
Add the following subclause:
d) Monthly reporting
When submitting any information required and interim certificates for payment, the Contractor shall use the Employer's standard forms and formats. No payment can be made before the Contractor is registered as a vendor on the Employer's system.

The Contractor shall submit payment certificates for all work rendered in the Employer's financial year within that specific year.

The Contractor shall submit and update on a monthly basis all the appendices to the site meeting minutes and a cash flow forecast for the works.

The Contractor shall complete monthly reports regarding training, empowerment, capacity building, small contractor development, labour and staff as required by the Employer. This information shall also be reported on monthly for all sub-contractors employed.

The Contractor shall submit payment certificates for all work rendered in the Employer's financial year within that specific year.

The Contractor shall submit and update on a monthly basis all the appendices to the site meeting minutes and a cash flow forecast for the works.

The Contractor shall complete monthly reports regarding training, empowerment, capacity building, small contractor development, labour and staff returns and any such aspects on the format as required by the Employer. This information shall alsobe reported on monthly for all sub-contractors employed.

Replace "clause 49" *in the 4th, 8th and 10th paragraphs with* "sub-clauses 13.7 and 13.8".

In the 11th paragraph, the following amendments apply:
• *Insert as a new 2nd sentence "Hire costs or minimum hourly charges per month for constructional plant shall be deemed to be a part of construction time".*

• *Delete "*received the letter of acceptance in terms of clause 12*" and replace with* "date of commencement in terms of clause 8.1".
• *In the last line, change* "clause 45" *to read* "clause 8.4".

Add the following at the end of the second last paragraph of the payment clause:

"... Such limitations to payments shall occur whenever the contractor falls behind by more than2 month(s) on his initial approved programme, in which case the application of this payment item shall be the same as for 13.01(b) (i.e. the total price offered for 13.01(c) is treated as a lump sum). Normal application continues once the contractor's progress has returned to within the time set for the limitation."

Add the following paragraphs:

"Should the combined total tendered for subitems (a), (b), and (c) exceed 20% of the tender sum (excluding CPA, contingencies and VAT), the tenderer shall state his reasons in writing for tendering in this manner. The tenderer's attention is drawn to Form B1: Contractor's Establishment on Site, (bound in this Volume), to be completed by the tenderer. If the tenderer should require additional compensation for his obligations under section 1300 (over and above the total tendered for item B13.01) by including such additional compensation in the tendered rates and/or lump sum of items in the Pricing Schedule, these items and the value of such additional compensation shall also be indicated in writing in a letter attached to Form B1.

Payment of the rate per month for subitems B13.01 (d), (f), (g) and (h) shall include full compensation for all the contractor's obligations relevant to health and safety legislation, environmental compliance, monthly reporting and security on site (as per clause 4.8 and 4.22 of the FIDIC Conditions of Contract).

The tendered rates for subitems 13.01 (d), (f), (g) and (h) shall apply in the same manner as pay subitem B13.01 (c) but shall not form part of the calculation of the restrictions imposed by Condition of Tender F.3.8 (c) and Form to tender B1: Contractor's Establishment on Site.

The tendered percentage under item (e) shall be the day, or part thereof, for which the vehicle was hired and used for its intended purpose. The rate tendered shall include full compensation for the hire of the vehicle including cost of insurances, fuel, wear and tear and any other incidentals.

The rate tendered for subitem B13.01 (g) shall include full compensation for registering on the Employer's project information module, compiling and capturing, monthly for the full duration of the Contract, the required information regarding training, empowerment, capacity building, targeted enterprise development, labour and staff returns. It shall further include for all personnel and other costs, disbursements, overheads and profit.

C1009 REHABILITATION

The contractor shall be responsible for the re-establishment of grass within the road reserve boundaries for all areas disturbed during construction. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material

generated for, or from, construction has to be stored temporarily, and designated or instructed areas outside the road reserve. It also includes the area where site offices were erected which may require rehabilitation at the end of the contract. All construction material, including concrete slabs and barbecue (braai) areas shall be removed from the site on completion of the contract unless written approval from the relevant landowner demonstrates it is to be left in place.

Responsibility for re-establishment of vegetation shall extend until expiry of the defects notification period. However, Rustenburg Local Municipality reserves the right to continue holding retention monies (or not releasing guarantees in lieu of retention) depending upon the state of cover at the end of the defects notification period. Such extension may continue until closure of the relevant quarry or borrow pit has been secured,

Rehabilitation of affected areas should be undertaken as early as possible when the relevant activities are done in order to reduce further environmental damage. All revegetation

should be undertaken using indigenous vegetation. The standard of rehabilitation should be to the satisfaction of the engineer and the relevant authorities. The Department of Minerals Resources will only issue closure certificates for borrow pits and quarries when they are satisfied with the rehabilitation undertaken. It should also be noted that in some cases there is a requirement for a final environmental audit covering the extent of the project.

C1010 RECORD KEEPING

The engineer and the DEO will continuously monitor the contractor's adherence to the approved impact prevention procedures and the DEO shall submit regular written reports to the ECO and to the engineer, at least once a month. The DEO will report the environmental compliance performance of the project at regular site meetings. The engineer shall issue to the contractor a notice of non-compliance whenever transgressions are observed. The DEO shall document the nature and magnitude of the non-compliance in a designated register, the action taken to discontinue the noncompliance,

the action taken to mitigate its effects and the results of the actions. The non-compliance shall be documented and reported to the engineer in the monthly report.

Copies of all authorisations shall be kept on site and made available for inspection by visiting officials from Rustenburg Local Municipality, relevant authorities or internal/external auditors.

C1011 COMPLIANCE AND PENALTIES

The contractor shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the construction site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. This record shall be submitted with the monthly reports and an oral report given at the monthly site meetings.

Any non-compliance/omissions with the procedures in this EMPl, environmental authorisations and the approved EMPr constitute a breach of the Conditions of Contract. Regulatory financial penalties imposed on Rustenburg Local Municipality shall be passed onto the defaulting parties.

C4.1: Location of the Works
C4.2: OHS Specifications
C4.3: Site Administration Forms
C4.4: Geological Investigations
C4.5: Climatic Conditions

CONTRACT
PART C4: SITE INFORMATION

C4.1 Location of the Works

The project is Located within the Rustenburg Local Municipality Jurisdiction.

AREA	No. of HH	LONGITUDE	LATITUDE
Seraleng	1976	27.353304127347613	-25.386115630880074

Figure 0-1 Location of Project Site

FUNCTIONALITY

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FUNCTIONALITY

NB: For a bidder to qualify, it is a requirement for a prospective bidder to score a minimum of 70 out of 100 points for functionality.

Values: 0 = Very poor, 1 = Poor, 3 =Good, 5 = Excellent

Rustenburg Local Municipality reserves the right to verify all the information provided.

ITEM	CRITERIA	WEIGHT	VALUE	SCORE	VERIFICATION METHOD
Company Experience					
1.1 Previously completed Building works projects (Please attach appointment letters and completion letters per project on client letterhead) from 2018-2024		**50**	**Attach appointment completion certificates. Please note that amounts will not be accumulative**		
	≥ R3 million; < R6 million (Value = 1)				
	≥ R6 million; < R10 million (Value = 3)				
	Above R10 million (Value = 5)				
Key Personnel : Please attach qualifications.					
2.1 Project / Contracts Manager		**10**	**A minimum qualification of NQF level 6 or higher in the Built Environment (Architecture, Construction Management, Civil Engineering, or Quantity Surveying)**		
	Level 6 (Value = 1)				
	Level 7 (Value = 3)				
	Level 8 and above (Value = 5)				
2.2 Site agent		**5**	**A minimum qualification of NQF level 5 or higher in Built environment (Architecture, Construction Management, Civil Engineering, or Quantity Surveying)**		
	Level 5 (Value = 01)				
	Level 6 (Value 3)				
	Level 7 and above (Value 5)				
2.3 Health and Safety Officer		**5**	**Minimum qualification of NQF level 5 in Safety Management or SAMTRAC**		
	Level 5 (Value = 01)				
	Level 6 (Value 3)				
	Level 7 and above (Value 5)				
Key personnel: Please attach CV with indicating years of experience in Civil and/or Building Works					
3.1 Project Manager		**10**	**Minimum experience of 2 years in Civil and/or Building Work as an Architect, Construction Manager, Civil Engineer, or Quantity Surveyor)** **Attach a comprehensive CV with Civil and/or Building Works Projects experience**		
	2-3 years (Value = 1)				

	4-6 years (Value = 3)				
	7 years or more (Value = 5)				
3.2 Site Agent		**05**	**Minimum experience of 2 years in Civil and/or Building Work as an Architect, Construction Manager, Civil Engineer, or Quantity Surveyor)** **Attach a comprehensive CV with Civil and/or Building Works Projects experience**		
	2-3 years (Value = 1)				
	4-6 years (Value = 3)				
	7 years or more (Value = 5)				
3.3 Health and Safety Officer		**05**	**Minimum experience of 2 years in Civil and/or Building Work as Safety Officer** **Attach a comprehensive CV with Civil and/or Building Works Projects experience**		
	2-3 years (Value = 1)				
	4-6 years (Value = 3)				
	7 years or more (Value = 5)				
3.4 Site Foreman		**05**	**Minimum experience of 5 years or more as Site Forman** **Attach a comprehensive CV with Civil and/or Building Works Projects experience**		
	5-8 years (Value = 1)				
	9-14 years (Value = 3)				
	15 years or more (Value = 5)				
NQF Level 5 Accreditation (Manage Labour – Intensive Construction Projects) Any of the above-mentioned personnel Contracts Manager or Site Agent)		**05**	**Accreditation (Manage Labour – Intensive Construction Projects) Any of the above-mentioned personnel Contracts Manager or Site Agent and Site Foreman)**		
	L.I.C NQF Level 5 – (Value =5)				
	No personnel with L.I.C (Value =0)				
TOTAL		**100**			

Calculate the points scored according to the following formula:

$$Ps = \frac{[So]}{Ms} \times Ap$$

Where:

Ps = percentage scored for functionality by the bid under consideration
So = total score of bids under consideration, i.e. weight X value = score
Ms = maximum possible score = 500
Ap = percentage allocated

Total percentage scored by the bidder on functionality: $Ps = \frac{\quad}{500} \times 100 =$

NB: No tender will be regarded as an acceptable tender/responsive if it fails to achieve the minimum qualifying score for functionality of 70 out of a maximum of 100 points.

AUTHORITY FOR SIGNATORY

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SIGNATORY AUTHORISATION

FORM T2.2.2: AUTHORITY OF SIGNATORY

With reference to Clause 2.13.4 of the Tender Data, I/we herewith certify that this tender is submitted by: (Mark applicable block)

a company, and attach hereto a certified copy of the required resolution of the Board of directors ☐

a partnership, and attach hereto a certified copy of the required resolution by all partners ☐

a close corporation, and attach hereto a certified copy of the required resolution of the Board of Officials ☐

a one-man business, and attach hereto certified proof that I am the sole owner of the business submitting a tender ☐

a joint venture, and attach hereto ☐

a) an notarially certified copy of the original document under which the joint venture was constituted; and
b) certified authorised by the participating members of the undersigned to submit tenders and conclude contracts on behalf of the joint venture

SIGNED ON BEHALF OF TENDERER: ……..…….

PLEASE NOTE:

Failure to complete all blank spaces on this form or attend to other details mentioned therein will render the Bid liable to rejection.
The signatory shall confirm his / her authority thereto by attaching on the tendering company's letterhead a duly signed and dated copy of the relevant resolution of the board of directors / partners.

MBD 1
INVITATION TO BID

RLM/OMM/0113/2024/25 - RE-ADVERT: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF SERALENG SPORTS FACILITY

PART A
MBD 1

INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE RUSTENBURG LOCAL MUNICIPALITY					
BID NUMBER:	**RLM/DRT/0170/2024/25**	**CLOSING DATE:**	**23 July 2025**	**CLOSING TIME:**	**09:00**
DESCRIPTION	**APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF RUSTENBURG RAPID TRANSPORT STATION SUPERSTRUCTURE ZONE B (TURNKEY SOLUTION) FOR 10 MONTHS**				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).					

BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX
SITUATED AT:

RUSTENBURG LOCAL MUNICIPALITY
MISSIONARY MPHENI HOUSE
CNR BEYERS NAUDE AND NELSON MANDELA DRIVE, RUSTENBURG

SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	**CODE**		**NUMBER**		
CELLPHONE NUMBER					
FACSIMILE NUMBER	**CODE**		**NUMBER**		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
TAX COMPLIANCE STATUS	**TCS PIN:**		OR	**CSD No:**	

ARE YOU THE ACCREDITED REPRESENTATIVE *IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?*	☐**Yes** ☐**No** **[IF YES ENCLOSE PROOF]**	***ARE YOU A FOREIGN BASED SUPPLIER FOR*** *THE GOODS /SERVICES /WORKS OFFERED?*	☐**Yes** ☐**No** **[IF YES, ANSWER PART B:3]**
TOTAL NUMBER OF ITEMS OFFERED		*TOTAL BID PRICE*	R
SIGNATURE OF BIDDER	.....	*DATE*	
CAPACITY UNDER WHICH THIS BID IS SIGNED			

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		TECHNICAL INFORMATION MAY BE DIRECTED TO:	
DEPARTMENT	**SCM**	**CONTACT PERSON**	Mr. A. Ngapo
CONTACT PERSON	Ms. J. Masinga	**TELEPHONE NUMBER**	014 590 3607
TELEPHONE NUMBER	014 590 3123	E-MAIL ADDRESS	angapo@rustenburg.gov.za
E-MAIL ADDRESS	jmasinga@rustenburg.gov.za		

PART B

TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:

1.1. **BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.**

1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED, COMPLETED WITH A BLACK PEN

1.3. **THIS BID IS SUBJECT TO THE RLM SUPPLY CHAIN MANAGEMENT POLICY, PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.**

2. TAX COMPLIANCE REQUIREMENTS

2.1 **BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.**

2.2 **BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.**

2.3 **APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.**

2.4 **FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.**

2.5 **BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.**

2.6 **IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED; EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.**

2.7 **WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.**

3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS: **(BIDDER MAY NOT BE DISQUALIFIED ON THIS PART IF INDICATED THAT THEY ARE NOT FOREIGN BASED SUPPLIER)**

3.1. **IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?** ☐ **YES** ☐ **NO**

3.2. **DOES THE ENTITY HAVE A BRANCH IN THE RSA?** ☐ **YES** ☐ **NO**

3.3. **DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?** ☐ **YES** ☐ **NO**

3.4. **DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?** ☐ **YES** ☐ **NO**

3.5. **IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?** ☐ **YES** ☐ **NO**

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS WILL RENDER THE BID INVALID.
NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE.

SIGNATURE OF BIDDER: ……

CAPACITY UNDER WHICH THIS BID IS SIGNED: ……

DATE: ……..

MBD 3.1
PRICING SCHEDULE

PART A
MBD 3.1

PRICING SCHEDULE – FIRM PRICES
(PURCHASES)

NOTE: **ONLY FIRM PRICES WILL BE ACCEPTED. NON-FIRM PRICES (INCLUDING PRICES SUBJECT TO RATES OF EXCHANGE VARIATIONS) WILL NOT BE CONSIDERED**

IN CASES WHERE DIFFERENT DELIVERY POINTS INFLUENCE THE PRICING, A SEPARATE PRICING SCHEDULE MUST BE SUBMITTED FOR EACH DELIVERY POINT

Name of bidder……	Bid number…….....
Closing Time ……	Closing date……...

OFFER TO BE VALID FOR 90 DAYS FROM THE CLOSING DATE OF BID.

ITEM NO.	QUANTITY	DESCRIPTION	BID PRICE IN RSA CURRENCY ** (ALL APPLICABLE TAXES INCLUDED)

- Required by: …….
- At: …….

  …….
- Brand and model …….
- Country of origin …….
- Does the offer comply with the specification(s)? *YES/NO
- If not to specification, indicate deviation(s) …….
- Period required for delivery …….

  *Delivery: Firm/not firm
- Delivery basis ……

Note: All delivery costs must be included in the bid price, for delivery at the prescribed destination.

** "all applicable taxes" includes value- added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.

BILL OF QUANTITIES/ PRICING SCHEDULE

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ATTACHED AS A SEPARATE ANNEXURE

MBD 4
DECLARATION OF INTEREST
(IN CASE OF MULTI DIRECTORS OR JOINT VENTURE, BIDDERS MUST SUBMIT SEPARATE MBD 4 DECLARATION FORMS FOR EACH DIRECTOR)

RLM/OMM/0113/2024/25 - RE-ADVERT: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF SERALENG SPORTS FACILITY

MBD 4: DECLARATION OF INTEREST

No bid will be accepted from persons in the service of the state.

1. Any legal person, including persons employed by the state[1], or persons having a kinship with persons employed by the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid (includes a price quotation, advertised competitive bid, limited bid or proposal). In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the bidder or his/her authorised representative declare his/her position in relation to the evaluating/adjudicating authority where-

   - the bidder is employed by the state; and/or

   - the legal person on whose behalf the bidding document is signed, has a relationship with persons/a person who are/is involved in the evaluation and or adjudication of the bid(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the bid.

2. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

2.1. Full Name of bidder or his or her representative: ……..……

2.2. Identity Number: …….

2.3. Position occupied in the Company (director, trustee, hareholder[2]): ……

2.4. Company Registration Number: …….

2.5. Tax Reference Number: .....

2.6. VAT Registration Number…….....….....

2.7. Personal Reference Tax Number……

2.7.1. The names of all directors / trustees / shareholders members, their individual identity numbers and state employee numbers must be indicated in paragraph 3 below.

[1]**"State" means –**

(a) any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
(b) any municipality or municipal entity;
(c) provincial legislature;
(d) national Assembly or the national Council of provinces; or
(e) Parliament.

[2]**"Shareholder" means a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.**

2.8. Are you presently in the service of the state?

(Tick applicable box)

YES		NO	

2.8.1. If yes, furnish particulars. ……

……..

[1]MSCM Regulations: "in the service of the state" means to be –

(a) a member of –
(i) any municipal council;
(ii) any provincial legislature; or
(iii) the national Assembly or the national Council of provinces;

(b) a member of the board of directors of any municipal entity; (c) an official of any municipality or municipal entity;

(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);
(e) a member of the accounting authority of any national or provincial public entity; or
(f) an employee of Parliament or a provincial legislature.

² Shareholder" means a person who owns shares in the company and is actively involved in the management of the company or business and exercises control over the company.

2.9. Have you been in the service of the state for the past twelve months?
(Tick applicable box)

YES		NO	

2.9.1. If yes, furnish particulars……..……..

……

2.10. Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid?
(Tick applicable box)

YES		NO	

2.10.1. If yes, furnish particulars……..……..

……
.

2.11. Are you, aware of any relationship (family, friend, other) between any other bidder and any persons
in the service of the state who may be involved with the evaluation and or adjudication of this bid?
(Tick applicable box)

YES		NO	

2.11.1. If yes, furnish particulars……..……..

2.12. Are any of the company's directors, trustees, managers, principal shareholders or stakeholders in
service of the state?
(Tick applicable box)

YES		NO	

2.12.1. If yes, furnish particulars……..……..

……

2.13. Are any spouse, child or parent of the company's directors trustees, managers, principle shareholders or stakeholders in service of the state?

*(**Tick applicable box**)*

YES		NO	

2.13.1. If yes, furnish particulars……...……..

……

2.14. Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract.

*(**Tick applicable box**)*

YES		NO	

2.14.1. If yes, furnish particulars……...……..

……

……
Signature

……
Date

……
Capacity

……
Name of Bidder

MBD 5

DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)

RLM/OMM/0113/2024/25 - RE-ADVERT: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF SERALENG SPORTS FACILITY

MBD 5
DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)

For all procurement expected to exceed R10 million (all applicable taxes included), bidders must complete the following questionnaire:

1 Are you by law required to prepare annual financial statements for auditing?

*YES	NO

1.1 If yes, submit audited annual financial statements for the past three years or since the date of establishment if established during the past three years.

……

……..

2 Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days?

*YES	NO

2.1 If no, this serves to certify that the bidder has no undisputed commitments for municipal services towards any municipality for more than three months or other service provider in respect of which payment is overdue for more than 30 days.

2.2 If yes, provide particulars.

……

……

……

3 Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract?

*YES	NO

3.1 If yes, furnish particulars

……

……

4. Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic?

*YES	NO

4.1 If yes, furnish particulars

…….....

…….....….

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME) …….....

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS TRUE AND CORRECT.

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

……..... ……..…….....
Name/s and Surname of Bidder Signature

……..... .....**2025**
Position in the Firm/Company Date

MBD 6.1
PREFERENCE POINTS CLAIM FORM

RLM/OMM/0113/2024/25 - RE-ADVERT: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF SERALENG SPORTS FACILITY

MBD 6.1 PREFERENCE CLAIMED IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 To be completed by the organ of state

a) The applicable preference point system for this tender is the 80/20 preference point system.

b) The 80/20 will be applicable in this tender.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

(a) Price; and

(b) Specific Goals.

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	80
SPECIFIC GOALS	20
Total points for Price and SPECIFIC GOALS	**100**

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

2. DEFINITIONS

(a) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation.

(b) **"price"** means an amount of money tendered for goods or services and includes all applicable taxes less all unconditional discounts.

(c) **"Rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes.

(d) **"tender for income-generating contracts"** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and

(e) **"The Act"** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 - \frac{Pt - P\,min}{P\,min}\right) \quad \text{or} \quad Ps = 90\left(1 - \frac{Pt - P\,min}{P\,min}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. POINTS AWARDED FOR PRICE

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 + \frac{Pt - P\,max}{P\,max}\right) \quad \text{or} \quad Ps = 90\left(1 + \frac{Pt - P\,max}{Pmax}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.
***Note to tenderers: "The tenderer must indicate how they claim points for each preference point system. Points claimed will be verified by RLM using the CSD Report, and preference points will be allocated accordingly*. Bidders who fail to complete the table below will NOT be disqualified BUT will not be allocated preference points.**

The specific goals allocated points in terms of this tender	Number of points allocated (80/20 system)	Number of points claimed (80/20 system) (To be completed by the tenderer)	Means of Verification
Rustenburg Jurisdiction	4		Latest (not older than three months) Municipal Account/Traditional Council letter
Rural /Township Businesses	4		Latest (not older than three months) Municipal Account/Traditional Council letter
Black People	2		Valid Sworn Affidavit
Persons with Disability	2		Disability verification letter
Youth	4		Certified ID copy
Women	2		Certified ID copy
SMME's	2		Company registration
Total	**20**		

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm…….

4.4. Company registration number: ……...

4.5. TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One-person business/sole propriety
- ☐ Close corporation
- ☐ Public Company
- ☐ Personal Liability Company
- ☐ (Pty) Limited
- ☐ Non-Profit Company
- ☐ State Owned Company

[TICK APPLICABLE BOX]

4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:

ii) The information furnished is true and correct;

iii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form.

iv) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct.

v) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –

(a) disqualify the person from the tendering process.
(b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct.
(c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation.
(d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
(e) forward the matter for criminal prosecution, if deemed necessary.

…….
SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME: …….

DATE: **……**

ADDRESS: **……**

……

MBD 8

DECLARATION OF BIDDERS PAST SUPPLY CHAIN MANAGEMENT PRACTICES

RLM/OMM/0113/2024/25 - RE-ADVERT: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF SERALENG SPORTS FACILITY

MBD 8
DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

1 **This Municipal Bidding Document must form part of all the bids invited.**

2 **It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.**

3 **The bid of any bidder may be rejected if that bidder, or any of its directors have:**

a. **abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system.**
b. **been convicted for fraud or corruption during the past five years;**
c. **willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or**
d. **been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).**

4 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

Item	Question	Yes	No
4.1	**Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector?** **(Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the *audi alteram partem* rule was applied).** The Database of Restricted Suppliers now resides on the National Treasury's website(www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.	**Yes** ☐	**No** ☐
4.1.1	**If so, furnish particulars:**		
4.2	**Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)?** **The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.**	**Yes** ☐	**No** ☐
4.2.1	**If so, furnish particulars:**		
4.3	**Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years**	**Yes** ☐	**No** ☐
4.3.1	**If so, furnish particulars:**		
Item	Question	Yes	No
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	**Yes** ☐	**No** ☐
4.4.1	**If so, furnish particulars:**		
4.5	**Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?**	**Yes** ☐	**No** ☐
4.7.1	**If so, furnish particulars:**		

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME) ……..……..……
CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM TRUE AND CORRECT.

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

……...	**……..**
Signature	**Date**
…….	**……..**
Position	**Name of Bidder**

MBD 9
CERTIFICATE OF INDEPENDENT BID DETERMINATION

RLM/OMM/0113/2024/25 - RE-ADVERT: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF SERALENG SPORTS FACILITY

MBD 9: CERTIFICATE OF INDEPENDENT BID DETERMINATION

1 This Municipal Bidding Document (MBD) must form part of all bids[1] invited.

2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).[2] Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.

3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:

a. take all reasonable steps to prevent such abuse;
b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and
c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.

4. This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.

5. In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid:

[1] Includes price quotations, advertised competitive bids, limited bids and proposals.

[2] Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete. I, the undersigned, in submitting the accompanying bid: **RLM/OMM/0113/2024/25 - RE-ADVERT: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF SERALENG SPORTS FACILITY** (Bid Number and Description) in response to the invitation for the bid made by:

_____**RUSTENBURG LOCAL MUNICIPALITY** _____

(Name of Municipality / Municipal Entity)

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of: _____ that:

(Name of Bidder): Bidders are required to fill in the name of their company in the space provided above.

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:

(a) has been requested to submit a bid in response to this bid invitation;

(b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and

(c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium[3] will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
   (a) prices;
   (b) geographical area where product or service will be rendered (market allocation)
   (c) methods, factors or formulas used to calculate prices;
   (d) the intention or decision to submit or not to submit, a bid;
   (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
   (f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

[3] Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

……	……
Signature	Date
…….	……
Position	Name of Bidder

CIDB DOCUMENTS

RLM/OMM/0113/2024/25 - RE-ADVERT: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF SERALENG SPORTS FACILITY

Contents

Number	Heading
The Tender	
Part T1: Tendering procedures	
T1.1	Tender Notice and Invitation to Tender
T1.2	Tender Data
Part T2: Returnable documents	
T2.1	List of Returnable Documents
T2.2	Returnable Schedules
The Contract	
Part C1: Agreement and Contract Data	
C1.1	Form of Offer and Acceptance
C1.2	Contract Data
C1.3	Form of Guarantee
C1.4	Occupational Health and Safety Agreement
Volume 3 – Book 2 of 3	
Part C2: Pricing data	
C2.1	Pricing Instructions
C2.2	Bills of Quantities
Volume 3 – Book 3 of 3	
Part C3: Scope of Work	
C3	Scope of Work
Part C4: Site information	
C4	Site Information

RUSTENBURG LOCAL MUNICIPALITY

RLM/OMM/0113/2024/25 - RE-ADVERT: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF SERALENG SPORTS FACILITY

T1.2 Tender Data

The conditions of tender are the Standard Conditions of Tender as contained in Annexure F of the CIDB Standard for Uniformity in Construction Procurement. (See www.cidb.org.za) which are reproduced without amendment or alteration for the convenience of tenderers as an Annexure to this Tender Data.

The Standard Conditions of Tender make several references to the Tender Data for details that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of tender. Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

Clause Number	Tender Data
F.1.1	The employer The employer is The Rustenburg Local Municipality.
F.1.3.2	Replace the contents of the clause with the following: The Standard Conditions of Tender, the Tender Data, List of Returnable Documents, and Returnable Schedules, which are required for the tender evaluation purposes, shall form part of the Contract arising from the invitation to tender.
F.2.1	Eligibility Only those tenderers who are registered with the CIDB or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a 7GB class of construction work, are eligible to submit tenders. Joint ventures are eligible to submit tenders provided that: Every member of the joint venture is registered with the CIDB. The lead partner has a contractor grading designation in the 7GB or higher, and the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a 7GB or higher class of construction work. Tenderers faced with the above scenario and who fail to meet the combined designation grading will not be considered for the tender.
F.2.1.	Eligibility Only those tenderers who have in their employ management and supervisory staff satisfying the requirements of the scope of work for labour intensive competencies for supervisory and management staff are eligible to submit tenders.
F.2.2	Accept that the Employer will not compensate the tenderer for any costs incurred in attending interviews in the office of the employer.
F.2.7	Clarification Meeting There will be no compulsory briefing session.

Clause Number	Tender Data
F.2.10.5	Pricing and tender offer Add the following to the clause: A digital copy of the Bill of Quantities can be obtained from E-Tender portal
F.2.11	Alterations to documents Add the following to the clause: To correct errors made, draw a line through the incorrect entry and write the correct entry above in black ink and place the full signatures of the authorised signatories next to the correct entry.
F.2.12	Alternative tender offers If a tenderer wishes to submit an alternative tender offer, the only criteria permitted for such alternative tender offer is that it demonstrably satisfies the Employer's standards and requirements, the details of which may be obtained from the Employer. Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative tender offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions. Pricing Data must reflect all assumptions in the development of the pricing proposal. Acceptance of an alternative tender offer will mean acceptance in principle of the offer. It will be an obligation of the contract for the tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements. The modified Pricing Data must include an amount equal to 5% of the amount tendered for the alternative offer to cover the Employer's costs of confirming the acceptability of the detailed design before it is constructed. Failure to properly comply with this clause, thereby preventing the Employer and/or the Engineer to properly assess the full implications of the alternative tender, is likely to disqualify the alternative offered from further consideration. No submission by the Contractor after award for additional payment or time for completion of Works relating to the alternative offer will be considered, the tendered rates submitted shall be considered to reflect the full and final cost implications of the alternative offer.
F.2.13	Submitting a tender offer Add the following to the clause: No claim will be entertained for faults in the tender price resulting from any discrepancies, omissions or indistinct figures.

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Clause Number	Tender Data
F.2.13.2	Replace the contents of the clause with the following: Return all volumes of the tender document to the Employer after completion of the relevant sections of each volume in their entirety by writing in black ink. All volumes are to be left intact in its original format and no pages shall be removed or re-arranged.
F.2.13.3	Parts of each tender offer communicated on paper shall be submitted as an original.
F.2.13.4	Add the following to the clause: Only authorised signatories may sign the original tender offer where required in terms of 2.13.3.
F.2.13.5 F2.15.1	The employer's address for delivery of tender offers and identification details to be shown on each tender offer package are: Physical address and Location of tender box: Foyer of Missionary Mpheni House, c/o Beyers Naude and Nelson Mandela Drive, Rustenburg. Identification details: BID NO: **RLM/DRT/0170/2024/25 : APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF RUSTENBURG RAPID TRANSPORT STATIONS SUPERSTRUCTURES ZONE B (TURNKEY SOLUTION) FOR 10 MONTHS** and the closing date and time of the tender.Postal address: P O Box 550, Rustenburg, 0300 The name and address of the tenderer shall be entered on the back of the envelope.
F.2.13.9	Add the following to the clause: Accept that all conditions, which are printed or written upon any stationary used by the Tenderer for the purpose of or in connection with the submission of a tender offer for this Contract, which are in conflict with the conditions laid down in this document shall be waived, renounced and abandoned.
F.2.14	Information and data to be completed in all respects Add the following to the clause: The Tenderer is required to enter information in the following sections of the document: Section T2.2 : Returnable Schedules Section Section C1.1 : Form of Offer and Acceptance Section Section C1.2 : Contract Data (Part 2) Section Section C2.2 : Bill of Quantities The above sections shall be signed by the Tenderer (and witnesses where required). Individual pages should only be initialled by the successful Tenderer and by the witnesses after acceptance by the Employer of the Tender Offer. The Tenderer shall complete and sign the Form of Offer prior to the submission of a Tender Offer. The Schedule of Deviations (if applicable) shall be signed by the successful Tenderer after acceptance by the Employer of the Tender Offer.

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Clause Number	Tender Data
	Accept that the Employer shall in the evaluation of tender offers take due account of the Tenderer's past performance in the execution of similar engineering works of comparable magnitude, and the degree to which he possesses the necessary technical, financial and other resources to enable him to complete the Works successfully within the contract period. Satisfy the Employer and the Engineer as to his ability to perform and complete the Works timeously, safely and with satisfactory quality, and furnish details in section T2.2.2 of contracts of a similar nature and magnitude which they have successfully executed in the past. Accept that the Employer is restricted in accordance with clause 4.(4) of the Construction Regulations 2003, to only appoint a contractor whom he is satisfied has the necessary competencies and resources to carry out the work safely. Accept that submitting inferior and inadequate information relating to health and safety shall be regarded as justifiable and compelling reasons not to accept the Tender Offer of the Tenderer scoring the highest number of tender evaluation points.
F.2.15.1	Closing Time The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.
F.2.15.2	Telephonic, telegraphic, telex, facsimile or e-mailed tender offers will not be accepted.
F.2.16.1	Tender offer validity The tender offer validity period is 90 days.
F.2.16.1	Add the following to the clause: If the tender validity expires on a Saturday, Sunday or public holiday, the tender shall remain valid and open for acceptance until the closure of business on the following working day.
F.2.18	Provide other material The tenderer shall, when requested by the Employer to do so, submit the names of all management and supervisory staff that will be employed to supervise the labour intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements. Add the following to the clause: Accept that if requested, the Tenderer shall within 14 days of the date upon which he is requested to do so, submit a full report from his banker as to his financial standing. The Employer may, in its discretion, and subject to the provisions of Section 4(1)(d) of the State Tender Board Act 86 of 1968, condone any failure to comply with the foregoing condition.
F.2.20.	Accept that the Employer, reserves the right to approach the Tenderer's banker or guarantor(s) as indicated in the tender document, or the bankers of each of the individual members of any joint venture that is constituted for purposes of ascertaining the financial strength of the Tenderer or of the individual member of such venture; and affirmation of the letter of intent referred to below. The tenderer is required to submit with his tender a letter of intent from an approved financial institution undertaking to provide the Construction Guarantee in the format included in Part C1.3 of this procurement document; and such guarantee with be put in place upon appointment.

RUSTENBURG LOCAL MUNICIPALITY

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Clause Number	Tender Data
F.2.22	Return of other tender documents Return all retained tender documents prior to the closing time for the submission of Tender Offers.
F.2.23	Certificates The tenderer is required to submit with his tender: a Certificate of Contractor Registration issued by the CIDB a copy of the CSD full report All documents stated as mandatory documents. Where a tenderer satisfies CIDB contractor grading designation requirements through joint venture formation, such tenderers must submit the Certificates of Contractor Registration in respect of each partner.
F.3.4	Opening of tender submissions Tenders will be opened immediately after the closing time for tender
F.3.5	Two-envelope system A two-envelope procedure will not be followed.
F.3.11	Evaluation of Tenders The procedure for the evaluation of responsive tenders is Method 1 (Functionality, 80/20 Preferential Point System).

EVALUATION ON TENDER PRICE

The following formula will be used to calculate the points for price.

$$Ps = x[1 - \frac{Pt - Pmin}{Pmin}]$$

where:

Ps = points scored for comparative price of tender under consideration
Pt = comparative price of tender under consideration
Pmin = comparative price of lowest acceptable tender
X = points assigned to price

NB: The lowest acceptable price will be based on the attached market analysis.

The following specific goals will be utilized for awarding of tenders. They can be applicable individually or wholly in awarding of points. The points will be allocated on merit per tender in line with the specification.

Ownership	Points	Means of Verification
Rustenburg Jurisdiction	4	Proof of address as envisaged on the list of mandatory documents and a full Central
Rural /Township Businesses	4	
Black People	2	

Ownership	Points	Means of Verification
Persons with Disability	2	Supplier Database full report will be used for verification and allocation of points.
Youth	4	
Women	2	

Annexure F: Standard Conditions of Tender as contained in Annex F of the CIDB Standard for Uniformity in Construction Procurement (as amended in Board Notice 86 of 2010 (May 2010)

F.1 GENERAL

F.1.1 Actions

F.1.1.1 The employer and each tenderer submitting a tender offer shall comply with these conditions of tender. In their dealings with each other they shall discharge their duties and obligations, as set out in F.2 and F.3, timeously and with integrity, behave equitably, honestly and transparently, comply with all legal obligations and not engage in anti-competitive practices.

F.1.1.2 The employer and the tenderer and all their agents and employees involved in the tender process shall avoid conflicts of interest and where a conflict of interest is perceived or known, declare any such conflict of interest, indicating the nature of such conflict. Tenderers shall declare any potential conflict of interest in their tender submissions. Employees, agents and advisors of the employer shall declare any conflict of interest to whoever is responsible for overseeing the procurement process at the start of any deliberations relating to the procurement process or as soon as they become aware of such conflict, and abstain from any decisions where such conflict exists or recuse themselves from the procurement process, as appropriate.

Note: 1) A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.

2) Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.

F.1.1.3 The employer shall not seek and a tenderer shall not submit a tender without having a firm intention and the capacity to proceed with the contract.

F.1.2 Tender Documents

The documents issued by the employer for the purpose of a tender offer are listed in the tender data.

F.1.3 Interpretation

F.1.3.1 The tender data and additional requirements contained in the tender schedules that are included in the returnable documents are deemed to be part of these conditions of tender.

F.1.3.2 These conditions of tender, the tender data and tender schedules which are only required for tender evaluation purposes, shall not form part of any contract arising from the invitation to tender.

F.1.3.3 For the purposes of these conditions of tender, the following definitions apply:

a) conflict of interest means any situation in which:

i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfill his or her duties impartially;

ii) an individual or organisation is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or

iii) incompatibility or contradictory interests exist between an employee and the organisation which employs that employee.

b) comparative offer means the tenderer's financial offer after all tendered parameters that will affect the value of the financial offer have been taken into consideration in order to enable comparisons to be made between offers on a comparative basis

c) corrupt practice means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process; and

d) fraudulent practice means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels

e) organization means a company, firm, enterprise, association or other legal entity, whether incorporated or not, or a public body

f) quality (functionality) means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs

F.1.4 Communication and employer's agent

Each communication between the employer and a tenderer shall be to or from the employer's agent only, and in a form that can be readily read, copied and recorded. Communications shall be in the English language. The employer shall not take any responsibility for non-receipt of communications from or by a tenderer. The name and contact details of the employer's agent are stated in the tender data.

F.1.5 The employer's right to accept or reject any tender offer

F.1.5.1 The employer may accept or reject any variation, deviation, tender offer, or alternative tender offer, and may cancel the tender process and reject all tender offers at any time before the formation of a contract. The employer shall not accept or incur any liability to a tenderer for such cancellation and rejection, but will give written reasons for such action upon written request to do so.

F.1.5.2 The employer may not subsequent to the cancellation or abandonment of a tender process or the rejection of all responsive tender offers re-issue a tender covering substantially the same scope of work within a period of six months unless only one tender was received and such tender was returned unopened to the tenderer.

F.1.6 Procurement procedures

F.1.6.1 General

Unless otherwise stated in the tender data, a contract will, subject to F.3.13, be concluded with the tenderer who in terms of F.3.11 is the highest ranked or the tenderer scoring the highest number of tender evaluation points, as relevant, based on the tender submissions that are received at the closing time for tenders.

F.1.6.2 Competitive negotiation procedure

F.1.6.2.1Where the tender data require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of F.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of F.3.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

F.1.6.2.2All responsive tenderers, or not less than three responsive tenderers that are highest ranked in terms of the evaluation method and evaluation criteria stated in the tender data, shall be invited in each round to enter into competitive negotiations, based on the principle of equal treatment and keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of F.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

F.1.6.2.3At the conclusion of each round of negotiations, tenderers shall be invited by the employer to make a fresh tender offer, based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.

F.1.6.2.4The contract shall be awarded in accordance with the provisions of F.3.11 and F.3.13 after tenderers have been requested to submit their best and final offer.

F.1.6.3 Proposal procedure using the two stage-system

F.1.6.3.1Option 1

Tenderers shall in the first stage submit technical proposals and, if required, cost parameters around which a contract may be negotiated. The employer shall evaluate each responsive submission in terms of the method of evaluation stated in the tender data, and in the second stage negotiate a contract with the tenderer scoring the highest number of evaluation points and award the contract in terms of these conditions of tender.

F.1.6.3.2Option 2

F.1.6.3.2.1 Tenderers shall submit in the first stage only technical proposals. The employer shall invite all responsive tenderers to submit tender offers in the second stage, following the issuing of procurement documents.

F.1.6.3.2.2 The employer shall evaluate tenders received during the second stage in terms of the method of evaluation stated in the tender data, and award the contract in terms of these conditions of tender.

F.2 TENDERER'S OBLIGATIONS
F.2.1 Eligibility

F.2.1.1 Submit a tender offer only if the tenderer satisfies the criteria stated in the tender data and the tenderer, or any of his principals, is not under any restriction to do business with employer.

F.2.1.2 Notify the employer of any proposed material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used by the employer as the basis in a prior

process to invite the tenderer to submit a tender offer and obtain the employer's written approval to do so prior to the closing time for tenders.

F.2.2 Cost of tendering

Accept that, unless otherwise stated in the tender data, the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer complies with requirements.

F.2.3 Check documents

Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.

F.2.4 Confidentiality and copyright of documents

Treat as confidential all matters arising in connection with the tender. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a tender offer in response to the invitation.

F.2.5 Reference documents

Obtain, as necessary for submitting a tender offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are not attached but which are incorporated into the tender documents by reference.

F.2.6 Acknowledge addenda

Acknowledge receipt of addenda to the tender documents, which the employer may issue, and if necessary apply for an extension to the closing time stated in the tender data, in order to take the addenda into account.

F.2.7 Clarification meeting

Attend, where required, a clarification meeting at which tenderers may familiarize themselves with aspects of the proposed work, services or supply and raise questions. Details of the meetings are stated in the tender data.

F.2.8 Seek clarification

Request clarification of the tender documents, if necessary, by notifying the employer at least five working days before the closing time stated in the tender data.

F.2.9 Insurance

Be aware that the extent of insurance to be provided by the employer (if any) might not be for the full cover required in terms of the conditions of contract identified in the contract data. The tenderer is advised to seek qualified advice regarding insurance.

F.2.10 Pricing the tender offer

F.2.10.1 Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes (except Value Added Tax (VAT), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable 14 days before the closing time stated in the tender data.

F2.10.2 Show VAT payable by the employer separately as an addition to the tendered total of the prices.

F.2.10.3 Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the conditions of contract identified in the contract data

F.2.10.4 State the rates and prices in Rand unless instructed otherwise in the tender data. The conditions of contract identified in the contract data may provide for part payment in other currencies.

F.2.11 Alterations to documents

Do not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations. Erasures and the use of masking fluid are prohibited.

F.2.12 Alternative tender offers

F.2.12.1 Unless otherwise stated in the tender data, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed.

F.2.12.2 Accept that an alternative tender offer may be based only on the criteria stated in the tender data or criteria otherwise acceptable to the employer.

F.2.13 Submitting a tender offer

F.2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in a joint venture to provide the whole of the works, services or supply identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.

F.2.13.2 Return all returnable documents to the employer after completing them in their entirety, either electronically (if they were issued in electronic format) or by writing legibly in non-erasable ink.

F.2.13.3 Submit the parts of the tender offer communicated on paper as an original plus the number of copies stated in the tender data, with an English translation of any documentation in a language other than English, and the parts communicated electronically in the same format as they were issued by the employer.

F.2.13.4 Sign the original and all copies of the tender offer where required In terms of the tender data. The employer will hold all authorized signatories liable on behalf of the tenderer. Signatories for tenderers proposing to contract as joint ventures shall state which of the signatories is the lead partner whom the employer shall hold liable for the purpose of the tender offer.

F.2.13.5 Seal the original and each copy of the tender offer as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

F.2.13.6 Where a two-envelope system is required in terms of the tender data, place and seal the returnable documents listed in the tender data in an envelope marked "financial proposal" and place the remaining returnable documents in an envelope marked "technical proposal". Each envelope shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

F.2.13.7 Seal the original tender offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the tender data.

F.2.13.8 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.

F.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the tender data.

F.2.14 Information and data to be completed in all respects

Accept that tender offers, which do not provide all the data or information requested completely and, in the form, required, may be regarded by the employer as non-responsive.

F.2.15 Closing time

F.2.15.1 Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Accept that proof of posting shall not be accepted as proof of delivery.

F.2.15.2 Accept that, if the employer extends the closing time stated in the tender data for any reason, the requirements of these conditions of tender apply equally to the extended deadline.

F.2.16 Tender offer validity

F.2.16.1 Hold the tender offer(s) valid for acceptance by the employer at any time during the validity period stated in the tender data after the closing time stated in the tender data.

F.2.16.2 If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period with or without any conditions attached to such extension.

F.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted.

F.2.16.4 Where a tender submission is to be substituted, submit a substitute tender in accordance with the requirements of F.2.13 with the packages clearly marked as "SUBSTITUTE".

F.2.17 Clarification of tender offer after submission
Provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the competitive position of tenderers or substance of the tender offer is sought, offered, or permitted.

Note: Sub-clause F.2.17 does not preclude the negotiation of the final terms of the contract with a preferred tenderer following a competitive selection process, should the Employer elect to do so.

F.2.18 Provide other material
F.2.18.1 Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.

F.2.18.2 Dispose of samples of materials provided for evaluation by the employer, where required.

F.2.19 Inspections, tests and analysis
Provide access during working hours to premises for inspections, tests and analysis as provided for in the tender data.

F.2.20 Submit securities, bonds, policies, etc.

If requested, submit for the employer's acceptance before formation of the contract, all securities, bonds, guarantees, policies and certificates of insurance required in terms of the conditions of contract identified in the contract data.

F.2.21 Check final draft

Check the final draft of the contract provided by the employer within the time available for the employer to issue the contract.

F.2.22 Return of other tender documents

If so instructed by the employer, return all retained tender documents within 28 days after the expiry of the validity period stated in the tender data

F.2.23 Certificates

Include in the tender submission or provide the employer with any certificates as stated in the tender data.

F.3 THE EMPLOYER'S UNDERTAKINGS

F.3.1 Respond to requests from the tenderer

F.3.1.1 Unless otherwise stated in the tender data, respond to a request for clarification received up to five working days before the tender closing time stated in the Tender Data and notify all tenderers who drew procurement documents.

F.3.1.2 Consider any request to make a material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used to prequalify a tenderer to submit a tender offer in terms of a previous procurement process and deny any such request if as a consequence:

a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements;

b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or

c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.

F.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until seven days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who drew documents.

F.3.3 Return late tender offers

Return tender offers received after the closing time stated in the Tender Data, unopened, (unless it is necessary to open a tender submission to obtain a forwarding address), to the tenderer concerned.

F.3.4 Opening of tender submissions

F.3.4.1 Unless the two-envelope system is to be followed, open valid tender submissions in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data. Tender submissions for which acceptable reasons for withdrawal have been submitted will not be opened.

F.3.4.2 Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the tender data, the name of each tenderer whose tender offer is opened and, where applicable, the total of his prices, preferences claimed and time for completion for the main tender offer only.

F.3.4.3 Make available the record outlined in F.3.4.2 to all interested persons upon request.

F.3.5 Two-envelope system

F.3.5.1 Where stated in the tender data that a two-envelope system is to be followed, open only the technical proposal of valid tenders in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data and announce the name of each tenderer whose technical proposal is opened.

F.3.5.2 Evaluate the quality of the technical proposals offered by tenderers, then advise tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of tenderers, who score in the quality evaluation more than the minimum number of points for quality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any preferences claimed. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for quality.

F.3.6 Non-disclosure

Not disclose to tenderers, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of tender offers, the final evaluation price and recommendations for the award of a contract, until after the award of the contract to the successful tenderer.

F.3.7 Grounds for rejection and disqualification

Determine whether there has been any effort by a tenderer to influence the processing of tender offers and instantly disqualify a tenderer (and his tender offer) if it is established that he engaged in corrupt or fraudulent practices.

F.3.8 Test for responsiveness

F.3.8.1 Determine, after opening and before detailed evaluation, whether each tender offer properly received:

a) complies with the requirements of these Conditions of Tender,

b) has been properly and fully completed and signed, and

c) is responsive to the other requirements of the tender documents.

F.3.8.2 A responsive tender is one that conforms to all the terms, conditions, and specifications of the tender documents without material deviation or qualification. A material deviation or qualification is one which, in the Employer's opinion, would:

a) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,

b) significantly change the Employer's or the tenderer's risks and responsibilities under the contract, or

c) affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified.

Reject a non-responsive tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.

F.3.9 Arithmetical errors, omissions and discrepancies

F.3.9.1 Check responsive tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.

F.3.9.2 Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with F.3.11 for:

a) the gross misplacement of the decimal point in any unit rate;

b) omissions made in completing the pricing schedule or bills of quantities; or
c) arithmetic errors in:
i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or

ii) the summation of the prices.

F.3.9.3 Notify the tenderer of all errors or omissions that are identified in the tender offer and invite the tenderer to either confirm the tender offer as tendered or accept the corrected total of prices.

F.3.9.4 Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows:

a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected.

b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.

F.3.10 Clarification of tender offers

Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.

F.3.11 Evaluation of tender offers

F.3.11.1 General

Appoint an evaluation panel of not less than three persons. Reduce each responsive tender offer to a comparative offer and evaluate them using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

F.3.11.2 Method 1: Financial offer

In the case of a financial offer:

a) Rank tender offers from the most favourable to the least favourable comparative offer.

b) Recommend the highest ranked tenderer for the award of the contract, unless there are compelling and justifiable reasons not to do so.

c) Re-rank all tenderers should there be compelling and justifiable reasons not to recommend the highest ranked tenderer and recommend the highest ranked tenderer, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

F.3.11.3 Method 2: Financial offer and preference

In the case of a financial offer and preferences:

a) Score each tender in respect of the financial offer made and preferences claimed, if any, in accordance with the provisions of F.3.11.7 and F.3.11.8.

b) Calculate the total number of tender evaluation points (TEv) in accordance with the following formula:

TEV = NFO + NP

where: NFO is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;

NP is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.

c) Rank tender offers from the highest number of tender evaluation points to the lowest.

d) Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points, and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated

F.3.11.4 Method 3: Financial offer and quality

In the case of a financial offer and quality:

a) Score each tender in respect of the financial offer made and the quality offered in accordance with the provisions of F.3.11.7 and F.3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.

b) Calculate the total number of tender evaluation points (TEV) in accordance with the following formula:

TEV = NFO + NQ

where: NFO is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;
NQ is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

c) Rank tender offers from the highest number of tender evaluation points to the lowest.

d) Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

F.3.11.5 Method 4: Financial offer, quality and preference

In the case of a financial offer, quality and preferences:

a) Score each tender in respect of the financial offer made, preference claimed, if any, and the quality offered in accordance with the provisions of F.3.11.7 to F.3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.

b) Calculate the total number of tender evaluation points (TEV) in accordance with the following formula:

TEV = NFO + NP + NQ

where: NFO is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;
NP is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.
NQ is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

c) Rank tender offers from the highest number of tender evaluation points to the lowest.

d) Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

F.3.11.6 Decimal places
Score financial offers, preferences and quality, as relevant, to two decimal places.

F.3.11.7 Scoring Financial Offers
Score the financial offers of remaining responsive tender offers using the following formula:
NFO = W1 + A
where: NFO is the number of tender evaluation points awarded for the financial offer.
W1 is the maximum possible number of tender evaluation points awarded for the financial offer as stated in the Tender Data.
A is a number calculated using the formula and option described in Table F.1 as stated in the Tender Data.
Table F.1: Formulae for calculating the value of A

Formula	Comparison aimed at achieving	Option 1*	Option 2*
1	Highest price or discount	$\mathbf{A} = \left(\mathbf{1} + \frac{(\mathbf{P} - \mathbf{Pm})}{\mathbf{Pm}}\right)$	A = P / Pm
2	Lowest price or percentage commission / fee	$\mathbf{A} = \left(\mathbf{1} - \frac{(\mathbf{P} - \mathbf{Pm})}{\mathbf{Pm}}\right)$	A = Pm / P
* Pm is the comparative offer of the most favourable comparative offer. P is the comparative offer of the tender offer under consideration			

F.3.11.8 Scoring preferences

Confirm that tenderers are eligible for the preferences claimed in accordance with the provisions of the tender data and reject all claims for preferences where tenderers are not eligible for such preferences.

Calculate the total number of tender evaluation points for preferences claimed in accordance with the provisions of the tender data.

F.3.11.9 Scoring quality

Score each of the criteria and sub-criteria for quality in accordance with the provisions of the Tender Data.
Calculate the total number of tender evaluation points for quality using the following formula:
NQ = W2 x SO/MS

where: SO is the score for quality allocated to the submission under consideration;
MS is the maximum possible score for quality in respect of a submission; and
W2 is the maximum possible number of tender evaluation points awarded for the quality as stated in the tender data

F.3.12 Insurance provided by the employer

If requested by the proposed successful tenderer, submit for the tenderer's information the policies and / or certificates of insurance which the conditions of contract identified in the contract data, require the employer to provide.

F.3.13 Acceptance of tender offer

Accept the tender offer, if in the opinion of the employer, it does not present any unacceptable commercial risk and only if the tenderer:

a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,
c) has the legal capacity to enter into the contract,
d) is not insolvent, in receivership, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,
e) complies with the legal requirements, if any, stated in the tender data, and
f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.

F.3.14 Prepare contract documents

F.3.14.1 If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of:
a) addenda issued during the tender period,
b) inclusion of some of the returnable documents,
c) other revisions agreed between the employer and the successful tenderer, and
F.3.14.1 Complete the schedule of deviations attached to the form of offer and acceptance, if any.

F.3.15 Complete adjudicator's contract

Unless alternative arrangements have been agreed or otherwise provided for in the contract, arrange for both parties to complete formalities for appointing the selected adjudicator at the same time as the main contract is signed.

F.3.16 Notice to unsuccessful tenderers

F.3.16.1 Notify the successful tenderer of the employer's acceptance of his tender offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the tender data, or agreed additional period.

F.3.16.2 After the successful tenderer has been notified of the employer's acceptance of the tender, notify all other tenderers that their offers have not been accepted.

F.3.17 Provide copies of the contracts

Provide to the successful tenderer the number of copies stated in the Tender Data of the signed copy of the contract as soon as possible after completion and signing of the form of offer and acceptance.

F.3.18 Provide written reasons for actions taken

Provide upon request written reasons to tenderers for any action that is taken in applying these conditions of tender, but withhold information which is not in the public interest to be divulged, which is considered to prejudice the legitimate commercial interests of tenderers or might prejudice fair competition between tenderers.

T2.1 additional Returnable Documents

Tenderers are required to submit the following with their tenders.
Certified copy of a Workmen's Compensation Certificate, Act 4 of 2002,
Certified copy of Unemployment Insurance Certificate, Act 4 of 2002,
Curriculum vitae of the person who prepares the Contractor's Health and Safety Plan.
Curriculum vitae of the Health and Safety Officer the successful tenderer intends appointing in accordance with the Occupational Health and Safety Act (Act 85 of 1993).
Curriculum Vitae of all supervisory staff.

T2.2.1: Record of Addenda to tender documents

We confirm that the following communications received from the Employer before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer:		
	Date	Title or Details

Attach additional pages if more space is required.

Signed ..... Date _____

Name ..... Position _____

Tenderer _____

T2.2.2: Compulsory Enterprise Questionnaire

The following particulars must be furnished. In the case of a joint venture, separate enterprise questionnaires in respect of each partner must be completed and submitted.

Section 1: Name of enterprise: . . . . . .

Section 2: VAT registration number, if any: . . . . . .

Section 3: CIDB registration number, if any: . . . . . .

Section 4: Particulars of sole proprietors and partners in partnerships

Name*	Identity number*	Personal income tax number*

* Complete only if sole proprietor or partnership and attach separate page if more than 3 partners

Section 5: Particulars of companies and close corporations

Company registration number . . . . . .

Close corporation number . . . . . .

Tax reference number . . . . . .

Section 6: Record of service of the state

Indicate by marking the relevant boxes with a cross, if any sole proprietor, partner in a partnership or director, manager, principal shareholder or stakeholder in a company or close corporation is currently or has been within the last 12 months in the service of any of the following:

□ a member of any municipal council
□ a member of any provincial legislature
□ a member of the National Assembly or National Council of Province
□ a member of the board of directors of any municipal entity
□ n official of any municipality or munici al entity
□ an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999)
□ a member of an accounting authority of any national or provincial public entity
□ an employee of Parliament or a provincial legislature

If any of the above boxes are marked, disclose the following:

Name of sole proprietor, partner, director, manager, principal shareholder or stakeholder	Name of institution, public off e, board or organ of state and position held	Status of service (tick appropriate column)	
		current	Within last 12 months

*insert separate page if necessary

Section 7: Record of spouses, children and parents in the service of the state

Indicate by marking the relevant boxes with a cross, if any spouse, child or parent of a sole proprietor, partner in a partnership or director, manager, principal shareholder or stakeholder in a company or close corporation is currently or has been within the last 12 months been in the service of any of the following:

□ a member of any municipal council
□ a member of any provincial legislature
□ an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999)

□ a member of the National Assembly or the National Council of Province
□ a member of the board of directors of any municipal entity
□ an official of any municipality or municipal entity
□ a member of an accounting authority of any national or provincial public entity
□ an employee of Parliament or a provincial legislature

Name of spouse, child or parent	Name of institution, public office, board or organ o state and position held	Status of service (tick appropriate column)	
		cu rent	Within last 12 months

*insert separate page if necessary

The undersigned, who warrants that he/she is duly authorised to do so on behalf of the enterprise:
i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest;
iv) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed ..... Date .....

Name ..... Position .....

Enterprise name _____

T2.2.3: Certificate of Authority for Joint Ventures

This Returnable Schedule is to be completed by joint ventures.

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Ms . . . . , authorised signatory of the company . . . . , acting in the capacity of lead partner, to sign all documents in connection with the tender offer and any contract resulting from it on our behalf.

NAME OF FIRM	ADDRESS	DULY AUTHORISED SIGNATORY
Lead partner		Signature. . . . . Name …….. Designation
		Signature. . . . . Name …….. Designation
		Signature. . . . . Name …….. Designation
		Signature. . . . . Name …….. Designation

T2.2.4: Schedule of Proposed Subcontractors

We notify you that it is our intention to employ the following Subcontractors for work in this contract.
If we are awarded a contract we agree that this notification does not change the requirement for us to submit the names of proposed Subcontractors in accordance with requirements in the contract for such appointments. If there are no such requirements in the contract, then your written acceptance of this list shall be binding between us.

We confirm that all subcontractors who are contracted to construct a house are registered as home builders with the National Home Builders Registration Council.			
	Name and address of proposed Subcontractor	Nature and extent of work	Previous experience with Subcontractor.

Signed ..... Date _____

Name ..... Position _____

Tenderer .....

T2.2.5: Schedule of Plant and Equipment

The following are lists of major items of relevant equipment that I/we presently own or lease and will have available for this contract or will acquire or hire for this contract if my/our tender is accepted.

(a) Details of major equipment that is owned by and immediately available for this contract.

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

(b) Details of major equipment that will be hired, or acquired for this contract if my/our tender is acceptable.

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

Signed ..... Date _____

Name ..... Position _____

Tenderer _____

T2.2.6: Schedule of the Tenderer's Experience

The following is a statement of similar work successfully executed / in progress by myself/ourselves in the last 5 years:

Employer, contact person and telephone number.	Description of contract	Value of work inclusive of VAT (Rand)	Date completed

Signed ..... Date _____

Name ..... Position _____

Tenderer .....

T2.2.7: FINANCIAL REFERENCES

(a) FINANCIAL STATEMENTS

I/We agree, if required, to furnish an audited copy of the latest set of financial statements together with my/our Directors' and Auditors' report for consideration by the Employer.

(b) DETAILS OF COMPANY'S BANK

I/We hereby authorise the Employer/Engineer to approach all or any of the following banks for a reference:

DESCRIPTION OF BANK DETAIL	BANK DETAIL APPLICABLE TO COMPANY HEAD OFFICE	BANK DETAIL APPLICABLE TO THE SITE OF THE WORKS
Name of bank		
Branch name		
Branch code		
Street address		
Postal address		
Name of manager		
Telephone number	( )	( )
Fax number	( )	( )
Account number		

Signed ..... Date .....

Name ..... Position .....

Tenderer .....

T2.2.8: Proposed amendments and qualifications

The Tenderer should record any deviations or qualifications he may wish to make to the tender documents in this Returnable Schedule. Alternatively, a tenderer may state such deviations and qualifications in a covering letter to his tender and reference such letter in this schedule.

The Tenderer's attention is drawn to clause F.3.8 of the Standard Conditions of Tender referenced in the Tender Data regarding the employer's handling of material deviations and qualifications.

Page	Clause or item	Proposal

Signed ..... Date _____

Name ..... Position _____

Tenderer .....

T2.2.9: Supervisory and Safety Personnel

PREVIOUS EXPERIENCE ON WORKS OF A SIMILAR NATURE DURING THE LAST FIVE YEARS

Name	% Time on Site	Position (Current)	Service (Years)	Name of Project And year executed	Value of Works	Position Occupied
Contracts Manager						
Contractor's Site Agent	100%					
Contractor's Foremen						
Construction Health and Safety Officer	100%					
Contractors Surveyor						

Tenderers shall indicate the percentage of working time these persons will be engaged on site. Tenderers are required to provide copies of curriculum vitas of all supervisory and safety personnel.

Signed _____ Date .....

Name _____ Position .....

Tenderer .....

T2.2.10: Labour Utilisation
Labour Categories - Definitions

NOTE: These definitions serve as a guideline to complete the following table and will in no respect alter the Project Specifications or Standardised Specifications

1. General Foreman / Foreman

An employee who gives out work to and directly co-ordinates and supervises employees. His duties encompass any one or more of the following activities:

a) Supervision;
b) Maintaining discipline;
c) Ensuring safety on the workplace;
d) Being responsible to the Contractor for efficiency and production for his portion of the works; and
e) Performing skilled work, whether in an instructional capacity or otherwise.

2. Charge hand

An employee engaged in any one or more of the following activities:

a) Being primarily employed in a supervisory capacity, but who may also be doing the work of an artisan;
b) Giving out work to other employees under his control and supervision;
c) Ensuring safety on the workplace;
d) Maintaining discipline; and
e) Being directly responsible to a general foreman or foreman or the Contractor or the Contractor's representative for efficiency and production for his portion of the works.

3. Artisan

An employee who has successfully completed all prescribed courses at a practical institutional training centre for a particular trade and who has successfully completed the on-site period of training as prescribed and who has successfully passed the prescribed trade tests.

4. Team Leader

An employee engaged in any one or more of the following activities:

a) Being employed in a supervisory capacity, but who may also be doing the work of a skilled person;
b) Giving out work to other employees under his control and supervision;
c) Maintaining discipline;
d) Being directly responsible to a Charge hand or a foreman or a general foreman or the employer's authorised representative for efficiency and production for his portion of the works.

5. Skilled Employee

An employee engaged in an ancillary trade or an assistant artisan.

Semi-Skilled Employee

An employee with any specified skills, an apprentice or a trainee-artisan.

7. Unskilled Employee

An employee engaged on any task or operation not specified above.

8. Imported Employee

Personnel permanently employed by Contractor.

9. Local Employee

Temporary workforce employed through Labour Desk.

MAN DAYS

Categories	No. of Man Days		
	Imported	Local	HDI (Y/N)
Contracts Manager			
Site Agent			
Foreman/Supervisors (specify type)			
3.1 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _			
3.2 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _			
3.3 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _			
Safety Inspectors (specify type)			
4.1 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _			
4.2 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _			
5. Charge hands			
6. Artisans			
7. Operators/Drivers			
8. Clerks/ Storeman			
9. Team Leader			

Categories	No. of Man Days		
	Imported	Local	HDI (Y/N)
10. Skilled Labour			
11. Semi-skilled Labour			
12. Unskilled Labour			

Signed ..... Date _____

Name ..... Position _____

Tenderer _____

T2.2.11: OCCUPATIONAL HEALTH AND SAFETY ACT:
STATEMENT BY TENDERING ENTITY

I, _____ duly authorised

to represent _____ (company name)

in my capacity as _____ hereby confirm that I accept full and exclusive responsibility for compliance by myself and all persons who perform work for me with the provisions of the Occupational Health and Safety Act, No. 85 of 1993 (as amended) and all regulations promulgated from time to time, whilst performing work on _____

_____

I confirm that all employees who perform work on the site shall be properly trained to do this in a manner which is safe and without risk to health and safety to themselves and others in the vicinity and undertake to have our activities adequately supervised in the interest of health and safety.

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2.12: Site Inspection Certificate

As required by Clause 2.7 of the Tender Data, I/we certify that I/we have visited the site of the Works and attended the site visit and clarification meeting on the date certified below.

I/we further certify that I am / we are satisfied with the description of the Work and the explanations given by the Engineer at the site visit and clarification meeting.

_____ _____

Signature of Tenderer Date

Site Visit

This will certify that

representing

attended a Site Inspection for this Contract on 20_____

_____(signed)

For the Engineer

CONTRACT
PART 1 (OF 4) : Agreements and contract data

C1.1 Form of Offer and Acceptance
C1.2 Contract Data
C1.3 Deed of Guarantee (Pro Forma)

C1.1 Form of Offer and Acceptance

Offer

The employer, identified in the acceptance signature block, has solicited offers to enter into a contract for the procurement of:

RLM/OMM/0113/2024/25 - RE-ADVERT: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF SERALENG SPORTS FACILITY

The tenderer, identified in the offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the returnable schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the tenderer, deemed to be duly authorized, signing this part of this form of offer and acceptance, the tenderer offers to perform all of the obligations and liabilities of the contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the contract data.

THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF VALUE ADDED TAX IS:

. . . . Rand (in words); R . . . . (in figures)

This offer may be accepted by the employer by signing the acceptance part of this form of offer and acceptance and returning one copy of this document to the tenderer before the end of the period of validity stated in the tender data, whereupon the tenderer becomes the party named as the contractor in the conditions of contract identified in the contract data.

Signature . . . . Date . . . .
Name . . . .
Capacity . . . .

for the tenderer (Name and address of organization) . . . .

. . . .

. . . .

Name and signature of witness . . . .

Acceptance

By signing this part of this form of offer and acceptance, the employer identified below accepts the tenderer's offer. In consideration thereof, the employer shall pay the contractor the amount due in accordance with the conditions of contract identified in the contract data. Acceptance of the tenderer's offer shall form an agreement between the employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1: Agreements and contract data, (which includes this agreement)
Part C2: Pricing data
Part C3: Scope of work.
Part C4: Site information

and drawings and documents or parts thereof, which may be incorporated by reference into Parts 1 to 4 above.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the tender schedules as well as any changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless contained in this schedule.

The tenderer shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data. Failure to fulfill any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the tenderer (now contractor) within five working days of the date of such receipt notifies the employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

Signature . . . . . Date . . . . . .
Name . . . . . .
Capacity . . . . . .

for the
Employer Rustenburg Local Municipality
Missionary Mpheni House
c/o Beyers Naude & Nelson Mandela Drive
Rustenburg

Name and signature of witness . . . . . Date. . . . . .

Schedule of Deviations

Notes :

1. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender;
2. A Tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid become the subject of agreements reached during the process of, offer and acceptance, the outcome of such agreement shall be recorded here;
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here;
4. Any change or addition to the tender documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract.

1 Subject . . . . . .
Details . . . . . .
. . . . . .
. . . . . .
2 Subject . . . . . .
Details . . . . . .
. . . . . .
. . . . . .
3 Subject . . . . . .
Details . . . . . .
. . . . . .
. . . . . .
. . . . . .
4 Subject . . . . . .
Details . . . . . .
. . . . . .
. . . . . .
. . . . . .
5 Subject . . . . . .
Details . . . . . .
. . . . . .
. . . . . .
. . . . . .

By the duly authorised representatives signing this agreement, the employer and the tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the tender schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this agreement.

for the tenderer

Signature . . . . . Date . . . . . .
Name . . . . . .
Capacity . . . . . .

(Name and address of organization) . . . . . .
. . . . . .

. . . .

Name and signature of witness . . . .

for the Employer

Signature . . . . Date . . . .
Name . . . .
Capacity . . . .
Rustenburg Local Municipality
Missionary Mpheni House
c/o Beyers Naude & Nelson Mandela Drive
Rustenburg

Name and signature of witness . . . . Date. . . . .

C1.2 Contract Data

GENERAL CONDITIONS OF CONTRACT

The General Conditions of Contract for Construction Works, 2nd Edition (2010), published by the South African Institution of Civil Engineering, is applicable to this Contract.

The General Conditions of Contract are not bound into this document, but are available at the Contractor's expense from the Secretary of the South African Institution of Civil Engineering, Private Bag X200, Halfway House, Midrand, 1685 or www.saice.org.za.

CONTRACT DATA

In terms of clause 1.1.1.8 of the General Conditions of Contract for Construction Works, 2nd Edition (2010), the following Contact Data apply to this Contract.

The Contract Data consists of two parts. Part 1 contains information provided by the Employer, while Part 2 contains information to be provided by the Contractor.

Part 1: Data Provided by the Employer

Clause	Contract Data
1.1.1.5	Replace the contents of Clause 1.1.1.5 with the following: The "Commencement Date" means the date on which the contactor receives a written instruction from the Employer to commence with the Works. The instruction to commence with the works will not be issued later than 28 days from the date that the Agreement made in terms of the Form of Offer and Acceptance comes into effect.
1.1.1.13	The Defects Liability Period for the Works shall be 365 days.
1.1.1.14	Add the following to the end of this definition: This clause shall apply mutatis mutandis to any portion or phase of the Works that may be described in the Scope of Works or in the Contract Data, or agreed subsequently between the Contractor and the Employer, and committed to writing. The time for achieving practical completion is 6 Months.
1.1.1.15	The Employer is Rustenburg Local Municipality.
1.1.1.16	The Engineer means any Director, Associate or Professional Engineer appointed generally or specifically by the management of the firm Rustenburg Local Municipality to fulfil the functions of the Engineer in terms of the Conditions of Contract.
1.1.1.26	The pricing strategy is Re-measurement Contract.
1.2.1	Add the following to the clause: 1.2.1.3 Sent by facsimile, electronic or any like communication irrespective of it being during office hours or otherwise. 1.2.1.4 Posted to the Contractor's address, and delivered by the postal authorities. 1.2.1.5 Delivered by a courier service, and signed for by the recipient or his representative.
1.2.1.2	The address of the Employer is: Rustenburg Local Municipality C/o Beyers Naudé & Nelson Mandela Drive P O Box 550 Rustenburg 0300
1.3.6	Add the following new Clause: The copyright in all documents, drawings and records (prepared by the Engineer) related in any manner to the Works shall vest in the Employer or the Engineer or both (according to the dictates of the Contract that has been entered into by the Engineer and the

Clause	Contract Data
	Employer for the Works), and the Contractor shall not furnish any information in connection with the Works to any person or organisation without the prior approval of the Employer to this effect.
3.1.3	The Engineer is, in terms of his appointment by the Employer for the design and administration of the Works included in the Contract, required to obtain the specific approval of the Employer for the execution of the following duties: 3.1.3.1 The issuing of an order to suspend the progress of the Works, the extra cost resulting from which order is to be borne by the Employer in terms of Clause 5.11 or the effect of which is liable to give rise to a claim by the Contractor for an extension of time under Clause 5.12 of these conditions. 3.1.3.2 The issuing of an instruction or order to vary the nature or quantity of the Works in terms of Clause 6.3, the estimated effect of which will be to increase the Contract Price by an amount exceeding R50 000, the evaluation of all variation orders in terms of Clause 6.4 and the adjustment of the sum(s) tendered for General Items in terms of Clause 6.11. 3.1.3.3 The approval of any claim submitted by the Contractor in terms of Clause 10.1.
4.1.2	Add the following to the clause: The Contractor shall provide the following to the Engineer for retention by the Employer or his assignee in respect of all works designed by the Contractor: 4.1.2.1 a Certificate of Stability of the Works signed by a registered Professional Engineer confirming that all such works have been designed in accordance with the appropriate codes of practice. 4.1.2.2 proof of registration and of adequate and current professional indemnity insurance cover held by the designer(s). 4.1.2.3 design calculations should the Engineer request a copy thereof. 4.1.2.4 engineering drawings and workshop details (both signed by the relevant professional engineer), in order to allow the Engineer to compare the design with the specified requirements and to record any comments he may have with respect thereto. 4.1.2.5 "As-Built" drawings in DXF electronic format after completion of the Works. The Contractor shall be responsible for the design of the Temporary Works.
4.3.3	Add the following new clause: The Contractor shall comply with the Occupational Health and Safety Specification prepared by the Employer in terms of the Construction Regulations, 2003 promulgated in terms of Section 43 of the Occupational Health and Safety Act (Act No. 85 of 1993). Without limiting the Contractor's obligations in terms of the Contract, the Contractor shall before commencement of the Works or any part thereof, be in the possession of an approved Health and Safety Plan. The Contractor shall submit an approved Health and Safety Plan to the Engineer within 14 days from the date that the Agreement made in terms of the Form of Offer and Acceptance comes into effect.
4.3.4	Add the following new clause: Contractor's liability as mandatory Notwithstanding any actions which the Employer may take, the Contractor accepts sole liability for due compliance with the relevant duties, obligations, prohibitions, arrangements and procedures imposed by the Occupational Health and Safety Act, 1993 (Act 85 of 1993), and all its regulations, including the Construction Regulations, 2003, for which he is liable as mandatory. By entering into this Contract it shall be deemed that the parties have agreed in writing to the above provisions in terms of Section 37 (2) of the Act.

Clause	Contract Data
4.3.5	Add the following new clause: Contractor to notify Employer The Employer retains an interest in all inquiries conducted under this Contract in terms of Section 31 and/or 32 of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and its Regulations following any incident involving the Contractor and/or Sub-Contractor and/or their employees. The Contractor shall notify the Employer in writing of all investigations, complaints or criminal charges which may arise pursuant to work performed under this Contract in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and Regulations.
4.3.6	Add the following new clause: Contractor's Designer The Contractor and his designer shall accept full responsibility and liability to comply with the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and the Construction Regulations, 2003 for the design of the Temporary Works and those part of the Permanent Works which the Contractor is responsible to design in terms of the Contract.
4.3.7	Add the following new clause: The Ministerial Determination 4, Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No 949 of 22 October 2010, as appended to these Contract Data as Annexure A, shall apply to works described in the Scope of Work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.
4.10.3	Add the following new clause: The Contractor shall use local labour in accordance with the requirements contained within the Scope of Work.
5.3.1	Add the following: The documentation required before commencement with Works Execution are: Health and Safety Plan (Refer to Clause 4.3) Initial Programme (Refer to Clause 5.6) A detailed cash flow forecast (Refer to Clause 5.6.2.6) Security (Refer to Clause 6.2) Insurance (Refer to Clause 8.6)
5.3.2	Add the following: The time to submit the documentation required (Refer to Clause 5.3.1) before commencement with Works execution is 14 days.
5.4.2	The access and possession of Site shall not be exclusive to the Contractor but as set out in the Scope or Works and/or Site information.
5.6.1	Add the following to the clause: In this regard the Contractor shall have regard for the phases and sub-phases (if applicable) for the Development, which shall also be the order in which the Permanent Works shall be constructed, unless otherwise agreed between the parties and committed to writing. If phased construction is applicable, the phases and sub-phases will be described in the Specifications and/or will be indicated on the Phasing Plan which forms part of the Drawings.
5.7.1	Delete the last paragraph of the clause and replace with the following: No such instruction by the Engineer to expedite progress shall be the subject of additional compensation to the Contractor unless the instruction explicitly states that the Contractor is entitled to additional compensation, and cites the amount of such compensation or the basis upon which it is to be determined.
5.8.1	The non-working days are Sundays. Special non-working days shall be all South African Statutory holidays and the official building holidays (which commences on 16 December and ends on 10 January).

<table>
<tr><th>Clause</th><th>Contract Data</th></tr>
<tr><td>5.12.3</td><td>Delete the contents of the clause and insert the following:
If an extension of time is granted, other than an extension resulting from abnormal rainfall in terms of Clause 5.12.5, the Contractor shall be paid such additional time-related General Items as are appropriate having regard to any other compensation which may already have been granted in respect of the circumstances concerned.</td></tr>
<tr><td>5.12.5</td><td>Add the following new clause:
Extension of time due to Abnormal Rainfall
Extension of time for completion of the Contract shall be allowed in the event of abnormal rainfall in accordance with the following formula:

V = (Nw - Nn) + (Rw - Rn)/20
Where:
V = Extension of time in calendar days for the calendar month under consideration
Nw = Actual number of days during the calendar month under consideration on which a rainfall of 10mm and more is recorded
Rw = Actual total rainfall in mm recorded during the calendar month under consideration
Nn = Average number of days, derived from rainfall records, on which a rainfall of 10mm and more was recorded during the relevant calendar month as per the data tabulated hereinafter
Rn = Average total rainfall in mm for the relevant calendar month, derived from rainfall records, as tabulated hereinafter

Where the extension of time due to abnormal rainfall has to be calculated for portion of a calendar month, pro rata values shall be used. Should V be negative for any particular month, and should its absolute value exceed the corresponding value of Nn, then V shall be taken as being equal to minus Nn. The total extension of time to be granted shall be the algebraic sum of all the monthly extensions, provided that if this total is negative then the time for completion shall not be reduced due to subnormal rainfall.

Rainfall records for the period of construction shall be taken on Site. The Contractor shall provide and install all the necessary equipment for accurately measuring the rainfall. The Contractor shall also provide, erect and maintain a security fence plus gate, padlock and keys at each measuring station, all at his own cost. The Engineer or his Representative shall take and record the daily rainfall readings. The Contractor shall be permitted to attend these readings, in the company of the Engineer's Representative. Access to the measuring gauge(s) shall at all times be under the Engineer's control.

The rainfall records applicable to this Contract are those recorded at Weather Station Rustenburg ARG 0511/5234. The following values of Nn and Rn shall apply:

<table>
<tr><th>Month</th><th>Rn (mm)</th><th>Nn (days)</th></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Clause</th><th>Contract Data</th></tr>
<tr><td></td><td>
<table>
<tr><td>January</td><td>130,1</td><td>4</td></tr>
<tr><td>February</td><td>94,2</td><td>3</td></tr>
<tr><td>March</td><td>75,1</td><td>2</td></tr>
<tr><td>April</td><td>60,3</td><td>2</td></tr>
<tr><td>May</td><td>9,8</td><td>0</td></tr>
<tr><td>June</td><td>5,9</td><td>0</td></tr>
<tr><td>July</td><td>1,6</td><td>0</td></tr>
<tr><td>August</td><td>7,2</td><td>0</td></tr>
<tr><td>September</td><td>18,8</td><td>0</td></tr>
<tr><td>October</td><td>57,5</td><td>2</td></tr>
<tr><td>November</td><td>89,4</td><td>3</td></tr>
<tr><td>December</td><td>105,8</td><td>3</td></tr>
<tr><td>TOTAL</td><td>655,7</td><td>19</td></tr>
</table>
No adjustment to the total for time-related preliminary and general items will be applicable for any automatic extension of time for completion granted in terms of this clause.</td></tr>
<tr><td>5.13.</td><td>Delete the contents of the clause and insert the following:
5.13.1 If the Contractor fails by the Due Completion Date to complete the Works, or any specific portion thereof that is identified in the Scope of Works to the extent which entitles him in terms of Clause 5.14.2 to receive a Certificate of Practical Completion for the Works, then the Contractor shall be liable to the Employer for the sum(s) stated below as (a) penalty(ies) for every day which shall elapse between the Due Completion Date for the Works or the specific portion of the Works and the actual Date of Practical Completion of the Works or of the specific portion.
The penalty for delay shall be: R2000-00 per day.
5.13.2 If before the issue of a Certificate of Practical Completion for the whole of the Works, or for any specific portion thereof that is identified in the Scope of Works, any further part of the Works has been:
5.13.2.1 certified as complete in terms of a Certificate of Practical Completion; or
5.13.2.2 occupied or used by the Employer, his agents, employees or other contractors (not being employed by the Contractor);
then the appropriate penalty for delay referred to in Clause 5.1.3.1 above shall be reduced by the amount which is determined by the Engineer to be appropriate under the circumstances.
5.13.3 The imposition of penalties in terms of Clause 5.13.1 shall not relieve the Contractor from his obligation to complete the Works, nor from any of his obligations and liabilities under the Contract.
5.13.4 All penalties for which the Contractor becomes liable in terms of Clause 5.13.1 shall be accumulative. The Employer may, without prejudice to any other method of recovery, deduct the amounts of all such penalties from any monies in his possession that are or may become due to the Contractor.
5.13.5 The imposition of any penalties in terms of Clause 5.13.1 shall not limit the right of the Engineer of the Employer to act in terms of Clause 9.2.</td></tr>
<tr><td>5.13.4</td><td>Add the following new Clause:
If the Contractor shall, without the prior written permission of the Engineer, in respect of any portions of the Works which are prescribed in the Scope of Work to be executed using labour intensive construction methods, or for which the maximum size and capacity of mechanical plant and equipment is restricted in terms of the Contract:
fail to execute such portions of the Works, or any parts thereof, utilising labour intensive construction methods strictly in accordance with the provisions of the Contract; or
utilise in the execution of such portions of the Works, or any parts thereof, mechanical plant or equipment which is in conflict with the terms of the Contract; or
utilise in the execution of such portions of the Work, workers drawn from sources other than those allowed in terms of the Contract;</td></tr>
</table>

Clause	Contract Data
	then the Contractor shall be liable to the Employer for the percentage stated below of the value of the Works so executed in conflict with the provisions of the relevant Scope of Work, as a penalty for non-compliance. The penalty for non-compliance is: 15% of the value of Works specified. The imposition of penalties in terms of this clause shall not relieve the Contractor from his obligation to complete the Works, nor from any of his obligations and liabilities under the Contract.
5.16.3	The Latent defect period is 10 years after the issue of the Final Approval Certificate in terms of Clause 15.6.1
6.1.1	Add the following to the clause: Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the Scope of Work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.
6.2.1	Add the following to this Clause: The amount of the Surety will be 10% of the Contract Price (including Value Added Tax) at the time that the Agreement comes into effect. The guarantee shall remain valid until the issue of the Certificate or Certificates of Completion in respect of the whole of the Permanent Works. The Pro Forma Form of Guarantee bound into the General Conditions of Contract is replaced by the Form of Guarantee (Deed of Surety ship) which is included in Part C1.3 of this document. This approval or otherwise shall be based upon legal opinion to be provided by the Engineer.
6.8.2	The application of a Contract Price Adjustment factor will not apply to this Contract. “Refer to Contract Price Adjustment Schedule for details”.
6.8.3	Price Adjustments for variations in the cost of special materials will be allowed. “The Contractor will be required to provide full details in Part 2 of the Contract Data”.
6.8.4	In line 8 delete the words “between the Employer and the Contractor”.
6.10.1.5	The percentage advance on materials not yet built into the Permanent Works is 80%.
6.10.3	The percentage retention is 10%. The Limit of Retention Money is 5% of the Contract Price at the time of the Agreement made in terms of the Form of Offer and Acceptance coming into effect.
6.10.4	In line 4 delete the word “said” and insert the word “correct”.
6.10.9	Replace the first sentence of the clause with the following: Within 14 days after the date of final approval as stated in the Final Approval Certificate, the Contractor shall deliver to the Engineer a final statement claiming final statement of all moneys due to him for additional work ordered by the Engineer after the Certificate of Completion date (save in respect of matters in dispute, in terms of Clause 58, and not yet resolved) plus the remainder of retention monies (subject to Clause 49.5.1) retained by the Employer.
6.11.1.3	Delete “15 %” and replace it with “25%”.
8.6.1.3	The limit of indemnity for liability insurance is R5 000 000 per event, the number of events being unlimited.
10.5.3	The number of Adjudication Board Members to be appointed is 1 (One).

CONTRACT PRICE ADJUSTMENT SCHEDULE	
Clause	Contract Data
1.1	The application of a Contract Price Adjustment factor will not apply to this Contract. The price adjustment formula provided in the General Conditions of Contract will apply, together with the following coefficients and the definition of the relevant indices indicated below; X=0,10 a=0.15 b=0.20 c=0.55 d=0.1
1.2	Replace the definitions of the relevant indices with the following: "L" is the "Labour Index" and shall be the "Consumer Price Index" as published in the Consumer Price Index Statistical Release P0141 (Table A – Consumer Price Index and percentage change according to Rustenburg of Statistics South Africa. "P" is the "Plant Index" and shall be the "Civil Engineering Plant" index as published in the Production Price Index Statistical Release P0142.1 (Table 12 – Price Index for selected materials) of Statistics South Africa. "M" is the "Materials Index" and shall be the "Civil Engineering" index as published in the Production Price Index Statistical Release P0142.1 (Table 11 – Production Price for materials used in certain industries) of Statistics South Africa. "F" is the "Fuel Index" and shall be the "Diesel fuel – Coast and Witwatersrand" index as published in the Production Price Index Statistical Release P0142.1 (Table 12 - Production Price Index for selected materials) of Statistics South Africa.
1.3	The base month shall be the month prior to the closing date of this tender.

Part 2: Data provided by the Contractor

<table>
<tr><th>Clause</th><th>Contract Data</th></tr>
<tr><td>1.1.1.9</td><td>The name of the Contractor is:</td></tr>
<tr><td>1.2.1.2</td><td>The address of the Contractor is:</td></tr>
<tr><td>6.2.1</td><td>The security to be provided by the Contractor shall be one of the following:
<table>
<tr><th>Type of Security</th><th>Contractor’s choice. Indicate “Yes” or “No”</th></tr>
<tr><td>Cash deposit of 10% of the Contract Sum (Incl. VAT).</td><td></td></tr>
<tr><td>Performance guarantee of10 % of the Contract Sum (Incl. VAT).</td><td></td></tr>
<tr><td>Retention of 10% of the value of the Works (Incl. VAT).</td><td></td></tr>
<tr><td>Cash deposit of 5% of the Contract Sum (Incl. VAT) plus retention of 5% of the value of the Works (Incl. VAT).</td><td></td></tr>
<tr><td>Performance guarantee of 5% of the Contract Sum (Incl. VAT) plus retention of 5% of the value of the Works (Incl. VAT).</td><td></td></tr>
</table></td></tr>
<tr><td>6.8.3</td><td>The variation in cost of special materials is:
<table>
<tr><th>Special Material</th><th>Method</th><th>Price for Base Month</th></tr>
<tr><td></td><td></td><td></td></tr>
</table></td></tr>
</table>

END OF SECTION

PRO FORMA
PERFORMANCE GUARANTEE

Contract No RLM/DRT/0170/2024/25

For use with the General Conditions of Contract for Construction Works, Second Edition, 2010.

GUARANTOR DETAILS AND DEFINITIONS
"Guarantor" means: …….....

Physical address:……...

"Employer" means: _____

"Contractor" means: _____

"Engineer" means: _____

"Works" means: _____

"Site" means: _____

"Contract" means: The agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties.

"Contract Sum" means: The accepted amount inclusive of tax of R ……

Amount in Words ……
"Guaranteed Sum" means: The maximum aggregate amount of
……..
Amount in Words ……

"Expiry Date" means: ……

CONTRACT DETAILS

Engineer issues: Interim Payment Certificates, Final Payment Certificate and the Certificate Completion of the Works as defined in the Contract.

PERFOMANCE GUARANTEE

1. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum

2. The Guarantor's period of liability shall be from and including the date of issue of this performance Guarantee and up to and including the Expiry Date or the date of issue by the Engineer of the Certificate of Completion of the Works or the date of payment in full of the Guaranteed sum, whichever occurs first. The Engineer and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.

3. The Guarantor hereby acknowledges that:

3.1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;

3.2 its obligation under this Performance Guarantee is restricted to the payment of money.

4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:

4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum Certified by the Engineer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;

4.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;

4.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 4.

5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the Full outstanding balance upon receipts of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:

5.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or

5.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the performance Guarantee is called up in terms of 5; and

5.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.

6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in term 1.

7. Where the Guarantor has made payment in term 5, the Employer shall upon the date of issue of the final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

8. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Employer.

9. Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.

10. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

11. The Guarantor chooses the physical address as stated above for the services of all notices for all purposes in connection herewith.

12. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor after it has expired.

13. This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.

14. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's court.

Signed at…….

Date…….....

Guarantor's signatory (1)…….....

Capacity…….....

Guarantor's signatory (2)…….....

Capacity…….

Witness signatory (1)……

Witness signatory (2)……

CONTRACT
PART 2 (OF 4) : PRICING DATA

C2.1 Pricing Instructions
C2.2 Bill of Quantities

1. Measurement and payment shall be in accordance with the relevant provisions of COLTO 1998 Edition for Road and Bridgework for State Road Authorities referred to in the Scope of Work. The Preliminary and General items shall be measured in accordance with the provisions of COLTO 1200, General Requirements and Provisions.

2. The units of measurement described in the Bills of Quantities are metric units. Abbreviations used in these Bills of Quantities are as follows:

% = percent
h = hour
ha = hectare
kg = kilogram
kl = kilolitre
km = kilometre
km-pass = kilometre-pass
kPa = kilopascal
kW = kilowatt
l = litre
m = metre
mm = millimetre
m² = square metre
m²-pass = square metre-pass
m³ = cubic metre
m³-km = cubic metre-kilometre
MN = meganewton
MN.m = meganewton-metre
MPa = megapascal
No. = number
Prov sum = Provisional sum
PC sum = Prime Cost sum
R/only = Rate only
sum = lump sum
t = ton (1000 kg)
W/day = Work day
Pers. Days = person days

3. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.

4. The prices and rates in these Bills of Quantities are fully inclusive prices for the work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the work described in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. These prices will be used as a basis for assessment of payment for additional work that may have to be carried out.

5. It will be assumed that prices included in these Bills of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to www.stanza.org.za or www.iso.org for information on standards)

6. Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount tendered such items

7. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bills of Quantities. A single lump sum will apply should a number of items be grouped together for pricing purposes.

8. The quantities set out in these Bills of Quantities are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in the Bills of Quantities.

9. Reasonable compensation will be received where no pay item appears in respect of work required in the Bills of Quantities in terms of the Contract and which is not covered in any other pay item.

10. The short descriptions of the items of payment given in these Bills of Quantities are only for the purposes of identifying the items. More details regarding the extent of the work entailed under each item appear in the Scope of Work.

Descriptions in the Bills of Quantities are abbreviated and comply generally with those in the COLTO Standardised Specifications.

12. All prices and rates entered in the Bill of Quantities must be excluding Value Added Tax (VAT). VAT will be added last on the summary page of the Bill of Quantities.

CONTRACT
PART 4 (OF 4) : OHS SPecifications

C4.2: OSH Specifications

OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION

Compiled for

RUSTENBURG LOCAL MUNICIPALITY

For

CIVIL CONSTRUCTION &

BUILDING PROJECTS

1. PREAMBLE

In terms of Construction Regulation 4(1)(a) of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), the Rustenburg Local Municipality, as the Client and/or its Agent on its behalf, shall be responsible to prepare Health & Safety Specifications for any intended construction project and provide any Principal Contractor who is making a bid or appointed to perform construction work for the Client and/or its Agent on its behalf with the same.

The Client's further duties are as described in the Act and the Regulations made there-under. In terms of Section 7 of the Act read with the Construction Regulation 5, the Principal Contractor shall be responsible for the Health & Safety Policy for the site as well as the Health and Safety Plan for the project.

This 'Health and Safety Specifications' document is governed by the "Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), hereinafter referred to as 'The Act'. Notwithstanding this, cognisance should be taken of the fact that no single Act or its set of Regulations can be read in isolation. Furthermore, although the definition of Health and Safety Specifications stipulates 'a documented specification of all health and safety requirements pertaining to associated works on a construction site, so as to ensure the health and safety of persons', it is required that the entire scope of the Labour legislation, including the Basic Conditions of Employment Act be considered as part of the legal compliance system. With reference to this specification document this requirement is limited to all health, safety and environmental issues pertaining to the site of the project as referred to here-in. Despite the foregoing it is reiterated that environmental management shall receive due attention.

Due to the wide scope and definition of construction work, every construction activity and site will be different, and circumstances and conditions may change even on a daily basis. Therefore, due caution is to be taken by the Principal Contractor when drafting the Health and Safety Plan based on these Health and Safety Specifications. Prior to drafting the Health and Safety Plan, and in consideration of the information contained here-in, the contractor shall set up a Risk Assessment Program to identify and determine the scope and details of any risk associated with any hazard at the construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard. This Risk Assessment and the steps identified will be the basis or point of departure for the Health and Safety Plan. The Health and Safety Plan shall include documented 'Methods of Statement' (see definitions under Construction Regulations) detailing the key activities to be performed in order to reduce as far as practicable, the hazards identified in the Risk Assessment.

In this a high premium is to be placed on the health and safety of the most valuable assets of the Rustenburg Local Municipality. These are its personnel, the personnel of its Clients and the physical assets of which it is the custodian and may also include the public as well. The responsibilities the Department and relevant stakeholders have toward its employees and other people present in the facilities or on the sites are captured further in this specification document. These responsibilities stem from both moral, civil and a variety of legal obligations. The Principal Contractor is to take due cognisance of the above statement.

Every effort has been made to ensure that this specification document is accurate and adequate in all respects. Should it however, contain any errors or omissions they may not be considered as grounds for claims under the contract for additional reimbursement or extension of time, or relieve the Principal Contractor from his responsibilities and accountability in respect of the project to which this specification document pertains. Any such inaccuracies, inconsistencies and/or inadequacies must immediately be brought to the attention of the Agent and/or Client.

2. SCOPE OF HEALTH AND SAFETY SPECIFICATION DOCUMENT

The Health and Safety Specifications pertaining to all the projects, cover the subjects contained in the index and is intended to outline the normal as well as any special requirements of the Client pertaining to the health and safety matters (including the

environment) applicable to the project in question. These Specifications should be read in conjunction with the Act, the Construction Regulations and all other Regulations and Safety Standards which were or will be promulgated under the Act or incorporated into the Act and be in force or come into force during the effective duration of the project. The stipulations in this specification, as well as those contained in all other documentation pertaining to the project, including contract documentation and technical specifications shall not be interpreted, in any way whatsoever, to countermand or nullify any stipulation of the Act, Regulations and Safety Standards which are promulgated under, or incorporated into the Act.

3. PURPOSE

The Client is obligated to implement measures to ensure the health and safety of all people and properties affected under its custodianship or contractual commitments, and is further obligated to monitor that these measures are structured and applied according to the requirements of these Health and Safety Specifications. (All references to the singular shall also be regarded as references to the plural)

The purpose of this specification document is to provide the relevant Principal Contractor (and his /her contractor) with any information other than the standard conditions pertaining to construction sites which might affect the health and safety of persons at work and the health and safety of persons in connection with the use of plant and machinery; and to protect persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work during the carrying out of construction work for the Rustenburg Local Municipality. The Principal Contractor (and his /her contractor) is to be briefed on the significant health and safety aspects of the project and to be provided with information and requirements on inter alia:

a) Safety considerations affecting the site of the project and its environment;
b) Health and safety aspects of the associated structures and equipment;
c) Submissions on health and safety matters required from the Principal Contractor (and his /her contractor); and
d) The Principal Contractor's (and his /her contractor) health & safety plan.

To serve to ensure that the Principal Contractor (and his /her contractor) is fully aware of what is expected from him/her with regard to the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and the Regulations made there-under including the applicable safety standards, and in particular in terms of Section 8 of the Act.

To inform the Principal Contractor that the Occupational Health and Safety Act, 1993 (Act 85 of 1993) in its entirety shall apply to the contract to which this specification document applies. The Construction Regulations promulgated on 18 July 2003 and incorporated into the above Act by Government Notice R 1010, published in Government Gazette 25207 shall apply to any person involved in construction work pertaining to this project, as will the Act.

4. DEFINITIONS

"Purpose of the Act" - To provide for the health and safety of persons at work and the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.

"Agent" – means any person who acts as a representative for a client;

"Client" – means any person for whom construction work is performed;

‘‘Construction Work’’ - is defined as any work in connection with:

the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;

the installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;

the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or

the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;

“Contractor” – means an employer, as defined in Section 1 of the Act, who performs construction work and includes Principal Contractors;

“Health and Safety File” – means a file, or other record in permanent form, containing the information required a contemplated in the regulations;

“Health and Safety Plan” – means a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified;

“Health and Safety Specification” – means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons;

“Method Statement” – means a document detailing the key activities to be performed in order to reduce as reasonably as practicable the hazards identified in any risk assessment;

“Principal Contractor” – means an employer, as defined in section 1 of the Act who performs construction work and is appointed by the client to be in overall control and management of a part of or the whole of a construction site;

“Risk Assessment” – means a program to determine any risk associated with any hazard at a construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard.

5. OCCUPATIONAL HEALTH & SAFETY MANAGEMENT

5.1 Structure and Organization of OH&S Responsibilities

5.1.1. Overall Supervision and Responsibility for OH&S

5.1.1.1 The Client and/or its Agent on its behalf to ensure that the Principal Contractor, appointed in terms of Construction Regulation 4(1)(c), implements and maintains the agreed and approved H&S Plan. Failure on the part of the Client or Agent to comply with this requirement will not relieve the Principal Contractor from any one or more of his/her duties under the Act and Regulations.

5.1.1.2 The Chief Executive Officer of the Principal Contractor in terms of Section 16 (1) of the Act to ensure that the Employer (as defined in the Act) complies with the Act. The pro forma Legal Compliance Audit may be used for this purpose by the Principal Contractor or his/her appointed contractor.

5.1.1.3 All OH&S Act (85 /1993), Section 16 (2) appointee/s as detailed in his/her/their respective appointment forms to regularly, in writing, report to their principals on matters of health and safety per routine and ad hoc inspections and on any deviations as soon as observed, regardless of whether the observation was made during any routine or ad hoc inspection and to ensure that the reports are made available to the principal Contractor to become part of site records (Health & Safety File).

5.1.1.4 The Construction Supervisor and Assistant Construction Supervisor/s appointed in terms of Construction Regulation 6 to regularly, in writing, report to their principals on matters of health and safety per routine and ad hoc inspections and on any deviations as soon as observed, regardless of whether the observation was made during any routine or ad hoc inspection and to ensure that the reports are made available to the principal Contractor to become part of site records (Health & Safety File).

5.1.1.5 All Health and Safety Representatives (SHE-Reps) shall act and report as per Section 18 of the Act.

5.1.2. FURTHER (SPECIFIC) SUPERVISION RESPONSIBILITIES FOR OH&S

5.1.2.1 Several appointments or designations of responsible and /or competent people in specific areas of construction work are required by the Act and Regulations. The following competent appointments, where applicable, in terms of the Construction Regulations are required to ensure compliance to the Act, Regulations and Safety Standards.

5.1.3 Required appointments as per the Construction Regulations:-

Item	Regulation	Appointment	Responsible Person
1.	4(1)(c)	Principal contractor for each phase or project	Client
2.	5.(3)(b)	Contractor	Principal Contractor
3.	5(11)	Contractor	Contractor
4.	6(1)	Construction supervisor	Contractor
5.	6(2)	Construction supervisor sub-ordinates	Contractor
6.	6(6)	Construction Safety Officer	Contractor
7.	7(1)	Person to carry out risk assessment	Contractor
8.	7(4)	Trainer/Instructor	Contractor
9.	8(1)(a)	Fall protection planner	Contractor
10.	10 (a)	Formwork & support work supervisor	Contractor
11.	10(e) + (f)	Formwork & support work examiner	Contractor
12.	11(1)	Excavation supervisor	Contractor
13.	11(3)(b)(ii)(b)	Professional engineer or technologist	Contractor
14.	11(3)(k)	Explosives expert	Contractor
15.	12(1)	Supervisor demolition work	Contractor
16.	12(2) + (3)	Demolition expert	Contractor
17.	12(11)	Explosives expert	Contractor
18.	14(2)	Scaffold supervisor	Contractor
19.	15(1)	Suspended platform supervisor	Contractor
20.	15(2)(c)	Compliance plan developer	Contractor

21.	15(8)(c)	Suspended platform expert	Contractor
22.	15(13)	Outrigger expert	Contractor
23.	17(8)(a)	Material hoist inspector	Contractor
24.	18(1)	Batch plant supervisor	Contractor
25.	18(7)	Batch plant operator	Contractor
26.	19(2)(b)	Power tool expert	Contractor
27.	19.2 (g) (i)	Power tool controller	Contractor
28.	20(f)	Tower crane operator	Contractor
29.	21(1)(d)(i)	Construction vehicle and mobile plant operator	Contractor
30.	21(1)(j)	Construction vehicle and mobile plant inspector	Contractor
31.	22(d)	Temporary electrical installations inspector	Contractor
32.	22 (e)	Temporary electrical installations controller	Contractor
33.	26 (a)	Stacking and storage supervisor	Contractor
34.	27 (h)	Fire equipment inspector	Contractor

5.1.4 This list may be used as a reference or tool to determine which components of the Act and Regulations would be applicable to a particular site, as was intended under paragraph 3 & 4 of the Chapter "Introduction" (page 4) above. This list must not be assumed to be exclusive or comprehensive.

5.2 COMMUNICATION & LIAISON

5.2.1 OH&S Liaison between the Employer, the Principal Contractor, the other Contractors, the Designer and other concerned parties shall be through the H&S Committee as per the procedures determined by the H&S Committee.

5.2.2 In addition to the above, communication may be directly to the Client or his appointed Agent, verbally or in writing, as and when the need arises.

5.2.3 Consultation with the workforce on OH&S matters will be through their Supervisors and H&S Representatives ('SHE – Reps')

5.2.4 The Principal Contractor will be responsible for the dissemination of all relevant OH&S information to the other Contractors e.g. design changes agreed with the Client and/or its Agent on its behalf and the Designer, instructions by the Client and/or his/her agent, exchange of information between Contractors, the reporting of hazardous/dangerous conditions/situations etc.

6. INTERPRETATION

The Occupational Health and Safety Act and all its Regulations, with the exception of the Construction Regulations, distinguish between the roles, responsibilities and functions of employers and employees respectively. It views consultants and contractors as employees of the "owner" of a construction or operational project, the "owner" being regarded as the employer. Only if formally agreed to by way of the written agreement in this regard between the "owner(s)" and consultant and /or between the "owner(s)" and the contractor(s), will these assumptions be relinquished in favour of the position agreed upon between the relevant parties.

The position taken by the Construction Regulations is that the "owner", in terms of its instructions, operates (has to operate) in the role of client as per relevant definition. The contractors working for the "client" are seen to be in two categories, i.e. the Principal Contractor and Contractors. The Principal Contractor has to take full responsibility for the health and safety on the site of the relevant project / contract. This includes monitoring health and safety conditions and overseeing administrative measures required by the Construction Regulations from all contractors on the project site.

(Ordinary / sub) Contractors are required to operate under the scrutiny and control (in terms of all health and safety measures which are covered in the Construction Regulations) of the Principal Contractor. Where, for the work the Principal Contractor will have to execute himself, practical health and safety measures are applicable, he will also be subject to the relevant requirements with which (ordinary / sub) Contractors have to comply. The Principal Contractor will, however, not have to actually fulfill such requirements in respect of any of the work / functions of any (ordinary / sub) Contractors on the site for which he has been appointed as Principal Contractor. However, he has to monitor / oversee such processes, ensuring that the requirements are complied with and that the required appointments / evaluations / inspections / assessments and tests are done and that the records are duly generated and kept as prescribed in the Construction Regulations. This has to feature clearly in the Principal Contractor's Health and Safety Plan.

7. RESPONSIBILITIES

7.1 CLIENT

7.1.1 The Client or his appointed Agent on his behalf will appoint each Principal Contractor for each project in writing for assuming the role of Principal Contractor as intended by the Construction Regulations and determined by the Bills of Quantities.

7.1.2 The Client or his appointed Agent on his behalf shall discuss and negotiate with the Principal Contractor the contents of the health and safety plan of the both Principal Contractor and Contractor for approval.

7.1.3 The Client or his appointed Agent on his behalf will take reasonable steps to ensure that the health and safety plan of both the Principal Contractor and Contractor is implemented and maintained. The steps taken will include periodic audits at intervals of at least once every month.

7.1.4 The Client or his appointed Agent on his behalf will prevent the Principal Contractor and/or the Contractor from commencing or continuing with construction work should the Principal Contractor and/or the Contractor at any stage in the execution of the works be found to:

have failed to have complied with any of the administrative measures required by the Construction Regulations in preparation for the construction project or any physical preparations necessary in terms of the Act;

have failed to implement or maintain their health and safety plan;

have executed construction work which is not in accordance with their health and safety plan; or

act in any way which may pose a threat to the health and safety of any person(s) present on the site of the works or in its vicinity, irrespective of him/them being employed or legitimately on the site of the works or in its vicinity.

7.2 PRINCIPAL CONTRACTOR

7.2.1 The Principal Contractor shall accept the appointment under the terms and Conditions of Contract. The Principal Contractor shall sign and agree to those terms and conditions and shall, before commencing work, notify the Department of Labour of the intended construction work in terms of Regulation 3 of the Construction Regulations. Annexure B of this Specification contains a "Notification of Construction Work" form. The Principal Contractor shall submit the notification in writing prior to commencement of work and inform the Client or his Agent accordingly.

7.2.2 The Principal Contractor shall ensure that he is fully conversant with the requirements of this Specification and all relevant health and safety legislation. This Specification is not intended to supersede the Act nor the Construction Regulations or any part of either. Those sections of the Act and the Construction Regulations which apply to the scope of work to be performed by the Principal Contractor in terms of this contract (entirely or in part) will continue to be legally required of the Principal Contractor to comply with. The Principal Contractor will in no manner or means be absolved from the responsibility to comply with all applicable sections of the Act, the Construction Regulations or any Regulations proclaimed under the Act or which may perceivable be applicable to this contract.

7.2.3 The Principal Contractor shall provide and demonstrate to the Client a suitable and sufficiently documented health and safety plan based on this Specification, the Act and the Construction Regulations, which shall be applied from the date of commencement of and for the duration of execution of the works. This plan shall, as appendices, include the health and safety plans of all Sub-contractors for which he has to take responsibility in terms of this contract.

7.2.4 The Principal Contractor shall provide proof of his registration and good standing with the Compensation Fund or with a licensed compensation insurer prior to commencement with the works.

7.2.5 The Potential Principal Contractor shall, in submitting his tender, demonstrate that he has made provision for the cost of compliance with the specified health and safety requirements, the Act and Construction Regulations. (Note: This shall have to be contained in the conditions of tender upon which a renderer's offer is based.)

7.2.6 The Principal Contractor shall consistently demonstrate his competence and the adequacy of his resources to perform the duties imposed on the Principal Contractor in terms of this Specification, the Act and the Construction Regulations.

7.2.7 The Principal Contractor shall ensure that a copy of his health and safety plan is available on site and is presented upon request to the Client, an Inspector, Employee or Sub-contractor.

7.2.8 The Principal Contractor shall ensure that a health and safety file, which shall include all documentation required in terms of the provisions of this Specification, the Act and the Construction Regulations, is opened and kept on site and made available to the Client or Inspector upon request. Upon completion of the works, the Principal Contractor shall hand over a consolidated health and safety file to the Client.

7.2.9 The Principal Contractor shall, throughout execution of the contract, ensure that all conditions imposed on his Sub-contractors in terms of the Act and the Construction Regulations are complied with as if they were the Principal Contractor.

7.2.10 The Principal Contractor shall from time to time evaluate the relevance of the Health and Safety Plan and revise the same as required, following which revised plan shall be submitted to the Client and/or his/her Agent for approval.

8. SCOPE OF WORK

These specifications are applicable to the scope of works of both civil engineering and architectural building projects as detailed in their specific tender documents, this amongst all includes for example:

Site clearance & establishment

Site hoarding, demarcation and demolition

Bulk Earthworks

Piling

Columns

Preparation of site by leveling, compaction and e.t.c

Excavations for other services Etc."

N.B Construction Regulation 5(3) (g) determines that potential contractors submitting tenders have made provision for the cost of health and safety measures during the construction process. The Principal Contractor shall on tendering make provision for the cost of health and safety measures in terms of his/her documented Health and Safety Plan and measures based on these Health and Safety Specifications during the period of the project. The cost shall be duly quantified and clearly identified for such identifiable purpose.

9. HEALTH AND SAFETY FILE

9.1 The Principal Contractor must, in terms of Construction Regulation 5(7), keep a Health & Safety File on site at all times that must include all documentation required in terms of the Act and Regulations and must also include a list of all Contractors on site that are accountable to the Principal Contractor and the agreements between the parties and details of work being done. A more detailed list of documents and other legal requirements that must be kept in the Health and Safety File is attached as an addendum to this document.

9.2 The Health and Safety File will remain the property of the Client and/or its Agent on its behalf throughout the period of the project and shall be consolidated and handed over to the Client and/or its Agent on its behalf at the time of completion of the project.

10. OH&S GOALS AND OBJECTIVES AND ARRANGEMENTS FOR MONITORING AND REVIEWING OH&S PERFORMANCE

10.1 The Principal Contractor is required to maintain an acceptable disabling incident frequency rate (DIFR) and report on this to the Client and/or its Agent on its behalf on a monthly basis.

11. IDENTIFICATION OF HAZARDS AND DEVELOPMENT OF RISK ASSESSMENTS, STANDARD WORKING PROCEDURES (SWP) AND METHOD STATEMENTS

11.1 The Principal Contractor is required to develop Risk Assessments, Standard Working Procedures (SWP) and Method Statements for each activity executed in the contract or project (see 4. below "Project/Site Specification Requirements")

11.2 The identification of hazards is over and above the hazards identification programme and those hazards identified during the drafting of the Health and Safety Plan.

12. ARRANGEMENTS FOR MONITORING AND REVIEW

12.1 Monthly Audit by Client and/or its Agent on its behalf

The Client and/or its Agent on its behalf will be conducting Periodic Audits at times agreed with the Principal Contractor Audit to comply with Construction Regulation 4(1)(d) to ensure that the principal Contractor has implemented, is adhering to and is maintaining the agreed and approved OH&S Plan.

12.2 Other audits and inspections by client and/or its agent on its behalf.

12.2.1 The Client and/or its Agent on its behalf reserves the right to conduct any other ad hoc audits and inspections as it and/or its Agent on its behalf deem necessary.

12.2.2 A representative of the Principal Contractor and the relevant Health and Safety Representative(s) i.e. (Safety Officer / or SHE-Reps) must accompany the Client and/or its Agent on its behalf on all Audits and Inspections and may conduct their own audit/inspection at the same time. Each party will, however, take responsibility for the results of his/her own audit/inspection results. The Client and/or its Agent on its behalf may require to be handed a copy of the minutes of the previous Health and Safety Committee meeting and Safety Officer/ SHE Rep's daily safety inspection reports reflecting possible recommendations made to the Employer for reference purposes.

12.3 INCIDENTS REPORTS

The Principal Contractor shall report all incidents where an employee is injured on duty to the extent that he/she:

Dies
becomes unconscious
loses a limb or part of a limb
is injured or becomes ill to such a degree that he/she is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he/she was usually employed

OR where:

a major incident occurred;
the health or safety of any person was endangered;
where a dangerous substance was spilled;
the uncontrolled release of any substance under pressure took place;
machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects;
machinery ran out of control,

The Report of the above incidents must be made to the Provincial Director of the Department of Labour within seven days and at the same time to the Client and/or its Agent on its behalf.

The Principal Contractor is required to provide the Client and/or its Agent on its behalf with copies of all statutory reports required in terms of the Act and the Regulations.

The Principal Contractor is required to provide the Client and/or its Agent on its behalf with a monthly "SHE Risk Management Report".

The Principal Contractor is required to provide as soon as possible the Client and/or its Agent on its behalf with copies of all internal and external accident/incident investigation reports including the reports as per clause 12 above. As soon as the occurrence of any accident/incident of whatever nature comes to the notice of the Principal Contractor, it shall be reported immediately to any of the following:

EOHSE cc: 014 5333 792 - OHS Consultants for the Rustenburg Local Municipality

Department of Labour: 014 5928 214

The client (Rustenburg Local Municipality): 014 590 3550

REVIEW

The Principal Contractor is to review the Hazard Identification, Risk Assessments and Standard Work Processes at each Production Planning and Progress Report meeting as the construction work develops and progresses and each time changes are made to the designs, plans and construction methods and processes.

The Principal Contractor must provide the Client and/or its Agent on its behalf, other Contractors and all other concerned parties with copies of any changes, alterations or amendments as contemplated in the above paragraph.

SITE RULES AND OTHER RESTRICTIONS

Site OH&S Rules

The Principal Contractor must develop a set of site-specific OH&S rules that will be applied to regulate the Health and Safety Plan and associated aspects of the construction.

When required for a site by law, visitors and non-employees upon entering the site shall be issued with the proper Personal Protective Equipment (PPE) as and when necessary.

Security Arrangements

The Principal Contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must include the rule that non-employees shall at all times be provided with fulltime supervision while on site.

The Principal Contractor must develop a set of Security rules and procedures and maintain these throughout the construction period.

If not already tasked to the H&S Officer appointed in terms of Construction Regulation 6(6), the Principal Contractor must appoint a competent Emergency Controller who must develop contingency plans for any emergency that may arise on site as indicated by the risk assessments. These must include a monthly practice/testing programme for the plans e.g. January: trench collapse, February: flooding etc. and practiced/tested with all persons on site at the time, participating.

Training

The contents and syllabi of all training required by the Act and Regulations including any other related or relevant training as required must be included in the Principal Contractor's Health and Safety Plan and Health and Safety File.

General Induction Training

All employees of the Principal and other Contractors must be in possession of proof of General Induction training.

Site Specific Induction Training

All employees of the Principal and other Contractors must be in possession of Site Specific Occupational Health and Safety Induction or other qualifying training.

Other Training

All operators, drivers and users of construction vehicles, mobile plant and other equipment must be in possession of valid proof of training.
All legal appointees in terms of the Act and Regulations must be in possession of valid proof of training as follows:

Occupational Health and Safety Training Requirements: (as required by the Construction Regulations and as indicated by the Health and Safety Specification Document & the Risk Assessment/s and recommendations by the Health and Safety Committee):

General Induction (Section 8 of the Act)
Site/Job Specific Induction (also visitors) (Sections 8 & 9 of the Act)
Site/Project Manager
Construction Supervisor
OH&S Representatives (Section 18 (3) of the Act)
Training of the Appointees indicated in 12.6.1 & 12.6.2 above
Operation of Cranes (Driven Machinery Regulations 18 (11)
Operators & Drivers of Construction Vehicles & Mobile Plant (Construction Regulation 21)
Basic Fire Prevention & Protection (Environmental Regulations 9 and Construction Regulation 27)
As a minimum basic First Aid to be upgraded when necessary (General Safety Regulations 3)
Storekeeping Methods & Safe Stacking (Construction Regulation 26)
Emergency, Security and Fire Co-coordinator

Accident and Incident Investigation

The Principal Contractor is responsible to oversee the investigation of all accidents/incidents where employees and non-employees were injured to the extent that he/she/they had to receive first aid or be referred for medical treatment by a doctor, hospital or clinic. (General Administrative Regulation 9).

The results of the investigation to be entered into the Accident/Incident Register listed above. (General Administrative Regulation 9).

The Principal Contractor is responsible for the investigation of all non-injury incidents as described in Section 24 (1) (b) & (c) of the Act and keeping a record of the results of such investigations including the steps taken to prevent similar incidents in future.

The Principal Contractor is responsible for the investigation of all road traffic accidents relating to the construction site and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

Notwithstanding the requirements of Section 24 of the Act, ALL incidents shall be investigated and reported on in writing, irrespective of whether such incident gave rise to injury or damage.

H&S Representatives (SHE-Reps – 'safety, health & environment') and H&S Committees: Designation of H&S Representatives ('SHE – Reps')

Where the Principal Contractor employs more than 20 persons (including the employees of other Contractors (sub-contractors) he has to appoint one H&S Representatives for every 50 employees or part thereof. (Section 17 of the Act and General Administrative Regulation 6. & 7).

H&S Representatives have to be designated in writing and the designation shall be in accordance with the Collective Agreement as concluded between the parties as is required in terms of General Administration Regulation 6.

Duties and Functions of the H&S Representatives
The Principal Contractor must ensure that the designated H&S Representatives conduct at least a weekly inspection of their respective areas of responsibility using a checklist and report thereon to the Principal Contractor, after which these reports shall be consolidated for submission to the Health and Safety Committee.

H&S Representatives must be included in and be part of accident/incident investigations.

H&S Representatives shall be members of at least one H&S Committee and must attend all meetings of that H&S committee.

Establishment of H&S Committee(s)

The Principal Contractor must establish H&S Committees consisting of designated H&S Representatives together with a number of Employers Representatives appointed as per Section 19(3) that are not allowed to exceed the number of H&S Representatives on the committee. The persons nominated by the employer on a H&S Committee must be designated in writing for such period as may be determined by him. The H&S Committee shall co-opt advisory (temporary) members and determine the procedures of the meetings including the chairmanship.

The H&S Committee must meet minimum monthly and consider, at least, the following Agenda for the first meeting. Thereafter the H&S Committee shall determine its own procedures as per the previous paragraph.

Agenda:

Opening and determining of chairmanship (only when necessary)
Minutes of Previous Minutes;
Observations;
Program and Safety considerations;
Hygiene;
Housekeeping improvement;
Incidents & Accidents / Injuries
Registers:
H&S Rep. Inspections;
Matters of First Aid;
Scaffolding;
Ladders;
Excavations;
Mobile plant and machinery;
Portable Electric Equipment;
Fire Equipment
Explosive Power Tools;
Power Hand tools;
Incident! Report Investigation;
Pressure Vessels;
Personal Protective Equipment.
Safety performance Evaluations
Education & Safety promotion program;
First Aid Officials and training in First Aid;
Demarcation of work- /hazardous-/safe/areas/walkways;
Posters and signage;
Environmental preservation and conservation;
Specific training programmes;
General
Date of Next Meeting
Closing

PROJECT/SITE SPECIFIC REQUIREMENTS

The following is a list of specific activities and considerations that have been identified for the project and site and for which Risk Assessments, Standard Working Procedures (SWP), management and control measures and Method Statements (where necessary) have to be developed by the Principal Contractor:

Clearing & Grubbing of the Area/Site

Site Establishment including:
Office/s
Secure/Safe Storage and storage areas for materials, plant & equipment

Ablution facilities
Sheltered dining area
Accommodation facilities
Vehicle access to the site
Dealing with existing Structures (.i.e. demolition)
Location of existing Services
Installation & Maintenance of Temporary Construction Electrical Supply, Lighting and Equipment
Adjacent Land uses/Surrounding property exposures
Boundary & Access control/Public Liability Exposures (Remember: the Employer is also responsible for the OH&S of non-employees affected by his/her work activities.)
Health risks arising from neighbouring as well as own activities and from the environment e.g. threats by dogs, bees, snakes, lightning, allergies etc.
Exposure to Noise
Exposure to Vibration
Exposure to dust (i.e. cement dust, etc)
Protection against dehydration and heat exhaustion
Protection from wet & cold conditions
Dealing with HIV/Aids and other diseases as per specific programme provided by the client and/or its Agent on its behalf.

Use of Portable Electrical Equipment including:
Angle grinder
Electrical Drilling machine
Skill saw

Excavations including:
Ground/soil conditions
Trenching
Shoring
Drainage
Daily inspections

Welding including:
Arc Welding
Gas welding
Flame Cutting
Use of LP Gas torches and appliances

Loading & Offloading of Trucks;

Aggregate/Sand and other Materials Delivery;

Manual and Mechanical Handling of heavy materials;

Lifting and Lowering Operations
Driving & Operation of Construction Vehicles and Mobile Plant including:

Trenching machine
Excavator
Bomag Roller
Saw cutter
Plate Compactor
Front End Loader
Tipper Trucks
Mobile Cranes and the ancillary lifting tackle
Parking of Vehicles & Mobile Plant
Towing of Vehicles & Mobile Plant

Use and Storage of Flammable Liquids and other Hazardous Substances – the client and/or its Agent on its behalf to be informed of this prior to commencing of the project;

Layering and Bedding of trench floor;

Installation of Pipes in trenches;

Backfilling of Trenches

Protection against Flooding

Gabion work

OHS Act Section/ Regulation	Subject	Requirements
Construction Regulation 3	Notice of carrying out Construction work	Department of Labour notified Copy of Notice available on Site
General Admin. Regulation 4	*Copy of OH&S Act (Act 85 of 1993)	Updated copy of Act & Regulations on site. Readily available for perusal by employees.
COID Act Section 80	*Registration with Compensation Insurer	Written proof of registration/Letter of good standing available on Site
Construction. Regulation 4 & 5(1)	H&S Specification & Programme	H&S Spec received from Client and/or its Agent on its behalf OH&S programme developed & Updated regularly
Section 8(2)(d) Construction Regulation 7	*Hazard Identification & Risk Assessment	Hazard Identification carried out/Recorded Risk Assessment and – Plan drawn up/Updated RA Plan available on Site Employees/Sub-Contractors informed/trained
Section 16(2)	*Assigned duties (Managers)	Responsibility of complying with the OH&S Act assigned to other person/s by CEO.
Construction Regulation 6(1)	Designation of Person Responsible on Site	Competent person appointed in writing as Construction Supervisor with job description
Construction Regulation 6(2)	Designation of Assistant for above	Competent person appointed in writing as Assistant Construction Supervisor with job description
Section 17 & 18 General Administrative Regulations 6 & 7	*Designation of Health & Safety Representatives	More than 20 employees - one H&S Representative, one additional H&S Rep. for each 50 employees or part thereof. Designation in writing, period and area of responsibility specified in terms of GAR 6 & 7 Meaningful H&S Rep. reports. Reports actioned by Management.
Section 19 & 20 General Administrative Regulations 5	*Health & Safety Committee/s	H&S Committee/s established. All H&S Reps shall be members of H&S Committees Additional members are appointed in writing. Meetings held monthly, Minutes kept. Actioned by Management.
Section 37(1) & (2)	*Mandatory Agreements with (Sub-)Contractors	Written agreement with (Sub-)Contractors List of (Sub-) Contractors displayed. Proof of Registration with Compensation Insurer/Letter of Good Standing Construction Supervisor designated Written arrangements re. H&S Reps & H&S Committee Written arrangements re. First Aid
Section 24 & General Admin. Regulation 8 COID Act Sect.38, 39 & 41	*Reporting of Incidents (Dept. of Labour)	Incident Reporting Procedure displayed. All incidents in terms of Sect. 24 reported to the Provincial Director, Department of Labour, within 3 days. (Annexure 1?)(WCL 1 or 2) and to the Client and/or its Agent on its behalf Cases of Occupational Disease Reported Copies of Reports available on Site

		Record of First Aid injuries kept
General Admin. Regulation 9	*Investigation and Recording of Incidents	All injuries which resulted in the person receiving medical treatment other than first aid, recorded and investigated by investigator designated in writing. Copies of Reports (Annexure 1) available on Site Tabled at H&S Committee meeting Action taken by Site Management.

Use of Explosives - the client and/or its Agent on its behalf to be informed of this prior to commencing of the project;

Protection from Overhead Power Lines;

As discovered by the Principal Contractor's hazard identification exercise;

As discovered from any inspections and audits conducted by the Client and/or its Agent on its behalf or by the Principal Contractor or any other Contractor on site

As discovered from any accident/incident investigation.

The following are in particular requirements depending on scope of works and will form a basis for compliance audits.

16.1 Administrative & Legal Requirements
Education, Training & Promotion
Public Safety & Emergency Preparedness
Personal Protective Equipment
Housekeeping
Working at heights
Scaffolding, Formwork & Support work
Ladders
Electrical Safeguarding
Emergency/Fire Prevention & Protection
Excavations & Demolition
Tools
Cranes
Personnel & Material Hoists
Transport & Materials Handling
Site Plant & Machinery

Plant & Storage Yards/Site Workshops Specifics
16.18 Health & Hygiene

17. OUTLINED DATA, REFERENCES AND INFORMATION ON CERTAIN AND/OR SPECIFIC OBLIGATORY REQUIREMENTS TO ENSURE COMPLIANCE

17.1 ADMINISTRATIVE & LEGAL REQUIREMENTS

OHS Act Section/ Regulation	Subject	Requirements
Construction Regulation 8	Fall Prevention & Protection	Competent person appointed to draw up and supervise the Fall Protection Plan Proof of appointees competence available on Site Risk Assessment carried out for work at heights Fall Protection Plan drawn up/updated & Available on Site
Construction. Regulation 8(5)	Roof work	Competent person appointed to plan & supervise Roof work. Proof of appointees competence available on Site Risk Assessment carried out Roof work Plan drawn up/updated Roof work inspect before each shift. Inspection register kept Employees medically examined for physical & psychological fitness. Written proof on site
Construction. Regulation 9	Structures	Information re. the structure being erected received from the Designer including: - geo-science technical report where relevant - the design loading of the structure - the methods & sequence of construction - anticipated dangers/hazards/special measures to construct safely Risk Assessment carried out Method statement drawn up All above available on Site Structures inspected before each shift. Inspections register kept
Construction. Regulation 10	Formwork & Support work	Competent person appointed in writing to supervise erection, maintenance, use and dismantling of Support & Formwork Design drawings available on site Risk Assessment carried out Support & Formwork inspected: - before use/inspection - before pouring of concrete - weekly whilst in place - before stripping/dismantling. - Inspection register kept
Construction. Regulation 14	Scaffolding	Competent persons appointed in writing to: - erect scaffolding (Scaffold Erector/s)

		- act as Scaffold Team Leaders - inspect Scaffolding weekly and after inclement weather (Scaffold Inspector/s) Written Proof of Competence of above appointees available on Site Copy of SABS 085 available on Site Risk Assessment carried out Inspected weekly/after bad weather. Inspection register/s kept
Construction. Regulation 15	Suspended Platforms	Competent persons appointed in writing to: - control the erection of Suspended platforms - act as Suspended platforms Team Leaders - inspect Suspended Scaffolding weekly and after inclement weather Risk Assessment conducted Certificate of Authorisation issued by a registered professional engineer available on Site/copy forwarded to the Department of Labour The following inspections of the whole installation carried out by a competent person - after erection and before use - daily prior to use. Inspection register kept The following tests to be conducted by a competent person: - load test of whole installation and working parts every three months - hoisting ropes/hooks/load attaching devices quarterly. Tests log book kept Employees working on Suspended Platform medically examined for physical & psychological fitness. Written proof available

OHS Act Section/ Regulation	Subject	Requirements
Construction. Regulation 11	Excavations	Competent person/s appointed in writing to supervise and inspect excavation work Written Proof of Competence of above appointee/s available on Site Risk Assessment carried out Inspected: - before every shift - after any blasting - after an unexpected fall of ground - after any substantial damage to the shoring - after rain. Inspections register kept Method statement developed where explosives will be/ are used

Construction. Regulation 12	Demolition Work	Competent person/s appointed in writing to supervise and control Demolition work Written Proof of Competence of above appointee/s available on Site Risk Assessment carried out Engineering survey and Method Statement available on Site Inspections to prevent premature collapse carried out by competent person before each shift. Inspection register kept
Construction. Regulation 17	Materials Hoist	Competent person appointed in writing to inspect the Material Hoist Written Proof of Competence of above appointee available on Site. Materials Hoist to be inspected weekly by a competent person. Inspections register kept.
Construction. Regulation 19	Explosive Powered Tools	Competent person appointed to control the issue of the Explosive Powered Tools & cartridges and the service, maintenance and cleaning. Register kept of above Empty cartridge cases/nails/fixing bolts returns recorded Cleaned daily after use Work areas are demarcated!
Construction. Regulation 18	Batch Plants	Competent person appointed to control the operation of the Batch Plant and the service, maintenance and cleaning. Register kept of above Risk Assessment carried out Batch Plant to be inspected weekly by a competent person. Inspections register kept
Construction. Regulation 20/ Driven Machinery Regulations 18 & 19	Cranes & Lifting Machines Equipment	Competent person appointed in writing to inspect Cranes, Lifting Machines & Equipment Written Proof of Competence of above appointee available on Site. Cranes & Lifting tackle identified/numbered Register kept for Lifting Tackle Log Book kept for each individual Crane Inspection: - All cranes - daily by operator - Tower Crane/s - after erection/6monthly - Other cranes - annually by comp. person - Lifting tackle(slings/ropes/chain slings etc.) - daily or before every new application
Construction. Regulation 22/ Electrical Machinery Regulations 9 & 10/ Electrical Installation Regulations	*Inspection & Maintenance of Electrical Installation & Equipment (including portable electrical tools)	Competent person appointed in writing to inspect/test the installation and equipment. Written Proof of Competence of above appointee available on Site. Inspections:

		- Electrical Installation & equipment inspected after installation, after alterations and quarterly. Inspection Registers kept Portable electric tools, electric lights and extension leads must be uniquely identified/ numbered. Weekly visual inspection by User/Issuer/Store man. Register kept.
Construction Regulation 26/ General Safety Regulation 8(1)(a)	*Designation of Stacking & Storage Supervisor.	Competent Person/s with specific knowledge and experience designated to supervise all Stacking & Storage Written Proof of Competence of above appointee available on Site

OHS Act Section /Regulation	Subject	Requirements
Construction. Regulation 27/ Environmental Regulation 9	*Designation of a Person to Co-ordinate Emergency Planning And Fire Protection	Person/s with specific knowledge and experience designated to co-ordinate emergency contingency planning and execution and fire prevention measures Emergency Evacuation Plan developed: Drilled/Practiced Plan & Records of Drills/Practices available on Site Fire Risk Assessment carried out All Fire Extinguishing Equipment identified and on register. Inspected weekly. Inspection Register kept Serviced annually
General Safety Regulation 3	*First Aid	Every workplace provided with sufficient number of First Aid boxes. (Required where 5 persons or more are employed) First Aid freely available Equipment as per the list in the OH&S Act. One qualified First Aider appointed for every 50 employees. (Required where more than 10 persons are employed) List of First Aid Officials and Certificates Name of person/s in charge of First Aid box/es displayed. Location of First Aid box/es clearly indicated. Signs instructing employees to report all Injuries/illness including first aid injuries
General Safety Regulation 2	Personal Safety Equipment (PSE)	PSE Risk Assessment carried out Items of PSE prescribed/use enforced Records of Issue kept Undertaking by Employee to use/wear PSE PSE remain property of Employer, not to be removed from premises GSR 2(4)

General Safety Regulation 9	*Inspection & Use of Welding/Flame Cutting Equipment	Competent Person/s with specific knowledge and experience designated to Inspect Electric Arc, Gas Welding and Flame Cutting Equipment Written Proof of Competence of above appointee available on Site All new vessels checked for leaks, leaking vessels NOT taken into stock but returned to supplier immediately Equipment identified/numbered and entered into a register Equipment inspected weekly. Inspection Register kept Separate, purpose made storage available for full and empty vessels
Hazardous Chemical Substances (HCS) Regulations Construction Regulation 23	*Control of Storage & Usage of HCS and Flammables	Competent Person/s with specific knowledge and experience designated to Control the Storage & Usage of HCS (including Flammables) Written Proof of Competence of above appointee available on Site Risk Assessment carried out Register of HCS kept/used on Site Separate, purpose made storage available for full and empty containers
Vessels under Pressure Regulations	Vessels under Pressure (VUP)	Competent Person/s with specific knowledge and experience designated to supervise the use, storage, maintenance, statutory inspections & testing of VUP's Written Proof of Competence of above appointee available on Site Risk Assessment carried out Certificates of Manufacture available on Site Register of VUP's on Site Inspections & Testing by Approved Inspection Authority (AIA): - after installation/re-erection or repairs every 36 months. Register/Log kept of inspections, tests. Modifications & repair

OHS Act Section /Regulation	Subject	Requirements
Construction Regulation 21	Construction Vehicles & Earth Moving Equipment	Operators/Drivers appointed to: Carry out a daily inspection prior to use Drive the vehicle/plant that he/she is competent to operate/drive Written Proof of Competence of above appointee available on Site. Record of Daily inspections kept
General Safety Regulation 13A	*Inspection of Ladders	Competent person appointed in writing to inspect Ladders Ladders inspected at arrival on site and weekly there after. Inspections register kept Application of the types of ladders (wooden, aluminium etc.) regulated by training and inspections and noted in register
General Safety regulation 13B	Ramps	Competent person appointed in writing to Supervise the erection & inspection of Ramps. Inspection register kept. Daily inspected and noted in register

EDUCATION & TRAINING

Subject	Requirement
*Company OH&S Policy Section 7(1)	Policy signed by CEO and published/Circulated to Employees Policy displayed on Employee Notice Boards Management and employees committed.
*Company/Site OH&S Rules (Section 13(a)	Rules published Rules displayed on Employee Notice Boards Rules issued and employees effectively informed or trained: written proof Follow-up to ensure employees understand/adhere to the policy and rules.
*Induction & Task Safety Training (Section 13(a)	All new employees receive OH&S Induction Training. Training includes Task Safety Instructions. Employees acknowledge receipt of training. Follow-up to ensure employees understand/adhere to instructions.
*General OH&S Training (Section 13(a)	All current employees receive specified OH&S training: written proof Operators of Plant & Equipment receive specified training Follow-up to ensure employees understand/adhere to instructions.
*Occupational Health & Safety Promotion	Incident Experience Board indicating e.g. * No. of hours worked without an Injury * No. of days worked without an Injury Mission, Vision and Goal Star Grading - Board kept up to date. Safety Posters displayed & changed regularly Employee Notice Board for OH&S Notices. Site OH&S Competition. Company OH&S Competition. Participation in Regional OH&S Competition Suggestion scheme.

PUBLIC SAFETY, SECURITY MEASURES & EMERGENCY PREPAREDNESS

Subject	Requirement
*Notices &Signs	Notices & Signs at entrances / along perimeters indicating “No Unauthorised Entry”. Notices & Signs at entrance instructing visitors and non - employees what to do, where to go and where to report on entering the site/yard with directional signs. e.g. “Visitors to report to Office”

	Notices & Signs posted to warn of overhead work and other hazardous activities. e.g. General Warning Signs
*Site Safeguarding	Nets, Canopies, Platforms, Fans etc. to protect members of the public passing / entering the site.
*Security Measures	Access control measures/register in operation Security patrols after hours during weekends and holidays Sufficient lighting after dark Guard has access to telephone/ mobile/other means of emergency communication
*Emergency Preparedness	Emergency contact numbers displayed and made available to Security & Guard Emergency Evacuation instructions posted up on all notice boards (including employees' notice boards) Emergency contingency plan available on site/in yard Doors open outwards/unobstructed Emergency alarm audible all over (including in toilets)
*Emergency Drill & Evacuation	Adequate No. of employees trained to use Fire Fighting Equipment. Emergency Evacuation Plan available displayed and practiced. (See Section 1 for Designation & Register)

PERSONAL PROTECTIVE EQUIPMENT

Subject	Requirement
*PPE needs analysis	Need for PPE identified and prescribed in writing. PPE remain property of Employer, not to be removed from premises GSR 2(4)
*Head Protection	All persons on site wearing Safety Helmets including Sub-contractors and Visitors (where prescribed)
*Foot Protection	All employees on site wearing Safety Footwear including Gumboots for concrete / wet work and non-slip shoes for roof work. Visitors to wear same upon request or where prescribed
*Eye and Face Protection	Eye and Face (also Hand and Body) Protection (Goggles, Face Shields, Welding Helmets etc.) used when operating the following: * Jack/ Kango Hammers * Angle / Bench Grinders * Electric Drills (Overhead work into concrete / cement / bricks * Explosive Powered tools * Concrete Vibrators / Pokers * Hammers & Chisels * Cutting / Welding Torches * Cutting Tools and Equipment * Guillotines and Benders * Shears * Sanders and Sanding Machines * CO2 and Arc Welding Equipment

	* Skill / Bench Saws * Spray Painting Equipment etc.
*Hearing Protection	Hearing Protectors (Muffs, Plugs etc.) used when operating the following: * Jack / Kango Hammers * Explosive Powered Tools * Wood/Aluminium Working Machines e.g. saws, planers, routers
*Hand Protection	Protective Gloves worn by employees handling / using: * Cement / Bricks / Steel / Chemicals * Welding Equipment * Hammers & Chisels * Jack / Kango Hammers etc.
*Respiratory Protection	Suitable/efficient prescribed Respirators worn correctly by employees handling / using: * Dry cement * Dusty areas * Hazardous chemicals * Angle Grinders * Spray Painting etc.
*Fall Prevention Equipment	Suitable Safety Belts / Fall Arrest Equipment correctly used by persons working on / in unguarded, elevated positions e.g.: * Scaffolding * Riggers * Lift shafts * Edge work * Ring beam edges etc. Other methods of fall prevention applied e.g. catch nets
*Protective Clothing	All jobs requiring protective clothing (Overalls, Rain Wear, Welding Aprons etc.) Identified and clothing worn.
*PPE Issue & Control	Identified Equipment issued free of charge. All PPE maintained in good condition. (Regular checks). Workers instructed in the proper use & maintenance of PPE. Commitment obtained from wearer accepting conditions and to wear the PPE. Record of PPE issued kept on H&S File. PPE remain property of Employer, not to be removed from premises GSR 2(4)

HOUSEKEEPING

Subject	Requirement
*Scrap Removal System	All items of Scrap/Unusable Off-cuts/Rubble and redundant material removed from working areas on a regular basis. (Daily) Scrap/Waste removal from heights by chute/hoist/crane. Nothing thrown/swept over sides. Scrap disposed of in designated containers/areas Removal from site/yard on a regular basis.
Stacking & Storage	Stacking:

(See Section 1 for Designation & Register)	* Stable, on firm level surface/base. * Prevent leaning/collapsing * Irregular shapes bonded * Not exceeding 3x the base * Stacks accessible * Removal from top only. Storage: * Adequate storage areas provided. * Functional – e.g. demarcated storage areas/racks/bins etc. * Special areas identified and demarcated e.g. flammable gas, cement etc. * Neat, safe, stable and square. * Store/storage areas clear of superfluous material. * Storage behind sheds etc. neat/under control. * Storage areas free from weeds, litter etc.
*Waste Control/ Reclamation	Re-usable off-cuts and other re-usable material removed daily and kept to a minimum in the work areas. All re-usable materials neatly stacked/stored in designated areas. (Nails removed/bent over in re-usable timber). Issue of hardware/nails/screws/cartridges etc. controlled and return of unused items monitored.
Sub-contractors (Housekeeping)	Sub-contractors are required to comply with Housekeeping requirements.

WORKING AT HEIGHTS (INCLUDING ROOF WORK)

Subject	Requirement
Openings	Unprotected openings adequately guarded/fenced/barricaded/catch nets installed
Roofing	Roof work discontinued when bad/hazardous weather Fall protection measures (including warning notices) when working close to edges or on fragile roofing material Covers over openings in roof of robust construction/secured against displacement

SCAFFOLDING / FORMWORK / SUPPORT WORK

Subject	Requirement
Access/System Scaffolding	Foundation firm / stable Sufficient bracing. Tied to Structure/prevented from side or cross movement Platform boards in good condition/sufficient/secured. Handrails and toe boards provided. Access ladders / stairs provided. Area/s under scaffolding tidy. Safe/unsafe for use signs

	Complying with OH&S Act/SABS 085
Free Standing Scaffolding	Foundation firm / stable Sufficient bracing. Platform boards in good condition/sufficient/secured. Handrails and toe boards provided. Access ladders / stairs provided. Area/s under scaffolding tidy. Safe/unsafe for use signs Height to base ratio correct Outriggers used /tied to structure where necessary Complying with OH&S Act/SABS 085
*Mobile Scaffolding	Foundation firm / stable Sufficient bracing. Platform boards in good condition/sufficient/secured. Handrails and toe boards provided. Access ladders / stairs provided. Area/s under scaffolding tidy. Safe/unsafe for use signs
*Mobile Scaffolding	Wheels / swivels in good condition Brakes working and applied. Height to base ratio correct. Outriggers used where necessary Complying with OH&S Act/SABS 085
Suspended Scaffolding	Outriggers securely supported and anchored. Correct No. of steel wire ropes used. Platform as close as possible to the structure. Handrails on all sides All winches / ropes / cables / brakes inspected regularly and replaced as prescribed Scaffolding complies with OHS Act (Act 85/93) Winch(es) maintained by competent person(s)
Formwork / Support Work	All components in good condition. Foundation firm / stable. Adequate bracing / stability ensured. Good workmanship / uprights straight and plumb. Good cantilever construction. Safe access provided. Areas under support work tidy. Same standards as for system scaffolding.
Special Scaffolding	Special Scaffolding e.g. Cantilever, Jib and Truss-out scaffolds erected to an acceptable standard and inspected by specialists.
Edges & Openings	Edges barricaded to acceptable standards. Manhole openings covered / barricaded. Openings in floor / other openings covered, barricaded/fenced. Stairs provided with handrails. Lift shafts barricaded / fenced off.

LADDERS

Subject	Requirement
*Physical Condition / Use & Storage	Stepladders - hinges/stays/braces/stiles in order. Extension ladders - ropes/rungs/stiles/safety latch/hook in order. Extension / Straight ladders secured or tied at the bottom / top. No joined ladders used Wooden ladders are never painted except with varnish Aluminium ladders NOT to be used with electrical work All ladders stored on hooks / racks and not on ground. Ladders protrude 900 mm above landings / platforms / roof. Fixed ladders higher than 5 m have cages/Fall arrest system

ELECTRICAL INSTALLATIONS AND SAFEGUARDING

Subject	Requirement
*Electrical Distribution Boards & Earth Leakage	Colour coded / numbered / symbolic sign displayed. Area in front kept clear and unobstructed. Fitted with inside cover plate / openings blanked off / no exposed “live” conductors / terminals/Door kept close Switches / circuit breakers identified. Earth leakage protection unit fitted and operating. Tested with instrument: Test results within 15 – 30 milliamps Aperture/Opening/s provided for the plugging in and removal of extension leads without the need to open the door Apertures and openings used for extension leads to be protected against the elements and especially rain
*Electrical Installations & Wiring	Temporary wiring / extension leads in good condition / no bare or exposed wires. Earthing continuity / polarity correct: Looking at the open connectors to connect the wiring, the word “Brown” has the letter ‘R’ in it, so the b’R’own wire connects to the ‘R’ight hand connector. “Blue” has the letter ‘L’ in it, so the b’L’ue wire connects to the ‘L’eft hand connector. Cables protected from mechanical damage and moisture. Correct loading observed e.g. no heating appliance used from lighting circuit etc. Light fittings/lamps protected from mechanical damage/moisture. Cable arrestors in place and used inside plugs
*Physical condition of Electrical Appliances & Tools	Electrical Equipment and Tools: (includes all items plugging in to a 16 Amp supply socket) Insulation / casing in good condition.

	Earth wire connected/intact where not of double insulated design Double insulation mark indicates that no earth wire is to be connected. Cord in good condition/no bare wires/secured to machine & plug. Plug in good condition, connected correctly and correct polarity.

EMERGENCY, FIRE PREVENTION AND PROTECTION

Subject	Requirement
*Fire Extinguishing Equipment	Fire Risks Identified and on record The correct and adequate Fire Extinguishing Equipment available for: * Offices * General Stores * Flammable Store * Fuel Storage Tank/s and catchment well * Gas Welding / Cutting operations * Where flammable substances are being used / applied. * Equipment Easily Accessible
*Maintenance	Fire equipment checked minimum monthly, serviced yearly
*Location & Signs	Fire Extinguishing Equipment: * Clearly visible * Unobstructed * Signs posted including “No Smoking” / “No Naked Lights” where required. (Flammable store, Gas store, Fuel tanks etc.)

Subject	Requirement
* Storage Issue & Control of Flammables (incl. Gas cylinders	Storage Area provided for flammables with suitable doors, ventilation, bund etc. Flammable store neat / tidy and no Class A combustibles. Decanting of flammable substances carried out in ignition free and adequately ventilated area. Container bonding principles applied Only sufficient quantities issued for one task or one day’s usage Separate, special gas cylinder store/storage area. Gas Cylinders stored / used / transported upright and secured in trolley/cradle/structure and ventilated. Types of Gas Cylinders clearly identified as well as the storage area and stored separately. Full cylinders stored separately from empty cylinders. All valves, gauges, connections, threads of all vessels to be checked regularly for leaks. Leaking acetylene vessels to be returned to the supplier IMMEDIATELY.
*Storage, Issue & Control of Hazardous Chemical Substances (HCS)	HCS storage principles applied: products segregated Only approved, non-expired HCS to be used Only the prescribed PPE shall be used as the minimum protection Provision made for leakage/spillage containment and ventilation Emergency showers/eye wash facilities provided HCS under lock & key controlled by designated person

	Decanted/issued in containers as prescribed with information/warning labels Disposal of unwanted HCS by accredited disposal agent No dumping or disposal of any HCS on or inside the storage area or anywhere else on the project site All vessels or containers to be regularly checked for leaks

EXCAVATIONS

Subject	Requirement
Excavations deeper than 1.5 m.	Shored / Braced to prevent caving / falling in. Provided with an access ladder. Excavations guarded/barricaded/lighted after dark in public areas Soil dumped at least 1 m away from edge of excavation On sloping ground soil dumped on lower side of excavation All excavations are subject to daily inspections

TOOLS

Subject	Requirement
*Hand Tools	Shovels / Spades / Picks: * Handles free from cracks and splinters * Handles fit securely * Working end sharp and true Hammers: * Good quality handles, no pipe or reinforcing steel handles. * Handles free from cracks and splinters Handles fit securely Chisels: * No mushroomed heads / heads chamfered * Not hardened * Cutting edge sharp and square Saws: * Teeth sharp and set correctly * Correct saw used for the job
*Explosive Powered Tools.	Only used by trained / authorised personnel. Prescribed warning signs placed / displayed where tool is in use. Work area must be properly isolated/ demarcated during use of tool. Inspected at least monthly by competent person and results recorded. Issue and return recorded including cartridges / nails and unused cartridges / nails / empty shells recorded. Cleaned daily after use.

CRANES

Subject	Requirement
Tower Crane	Only operated by trained authorised operator with valid certificate of training Structure - no visible defects Electrical installation good/safe Crane hook: Throat pop marked/safety latch fitted/functional SWL/MML displayed Limit switches with backup switches fitted/operational Access Ladder fitted with backrests/Fall arrest system installed Lifting tackle in good condition/inspection colour coding Lifting tackle checked daily
*Mobile Crane	Only operated by trained authorised operator with valid certificate of training Rear view mirrors Windscreen visibility good Windscreen wipers operating effectively Indicators operational Hooter working Tyres safe/sufficient tread/pressure visibly sufficient No missing Wheel nuts Headlights, taillights operational Reverse alarm working and audible and known by all employees Grease nipples and grease on all joints No Oil leaks Hydraulic pipes visibly sound/no leaks No corrosion on Battery terminals Boom visibly in good condition/no apparent damage Cable/sheaves greased/no visible damage/split wires/corrosion and checked daily Brakes working properly Crane hook: Throat pop marked/safety latch fitted/functional SWL/MML displayed By-pass valves operational Deflection chart displayed/visible to operator/driver Outriggers functional used
*Gantry Crane	Only operated by trained authorised persons Correct slinging techniques used Recognised/displayed on chart signals used Log book kept/up to date Prescribed inspections conducted on crane &lifting tackle and checked daily “Crane overhead” signage, where applicable Crane hook: Throat pop marked/safety latch fitted/functional SWL/MML displayed/load limiting switches fitted/operational

14.14 BUILDER’S HOIST

Subject	Requirement
Builder's Hoist	"Hoist In Operation" - sign displayed. General construction strong and free from patent defects. Tower: * Adequately secured / braced. * At least 900 mm available for over travel. * Barricaded at least 2 100 mm high at ground level and floors. * Landing place provided with gate at least 1 800 high. Platform: * No persons conveyed on platform * Steel wire ropes with breaking strength of six times max. load. * Signal systems used which may include two way radio connection. * Goods prevented from moving / falling off. * Effective brake capable of stopping and holding max. load.

14.15 TRANSPORT & MATERIALS HANDLING EQUIPMENT

Subject	Requirement
*Site Vehicles	All Site Vehicles, Dumpers, Bobcats, Loaders etc; checked daily before use by driver / operator. Inventory of vehicles used/operated on site Inspection by means of a checklist / results recorded. No persons riding on equipment not designed or designated for passengers. Site speed limit posted, enforced and not exceeded. Drivers / Operators trained / licensed and carrying proof. No unauthorised persons allowed driving / operating equipment.
Conveyors	Conveyor belt nip points and drive gear guarded. Emergency stop/lever/brake fitted, clearly marked & accessible and tested to be functional under full load.

14.16 SITE PLANT AND MACHINERY

Subject	Requirement
Brick Cutting Machine	Operator Trained. Only authorised persons use the machine. Emergency stop switch clearly marked and accessible. Area around the machine dry and slip/trip free/clear of off-cuts All moving drive parts guarded/electrical supply cable protected Operator using correct PPE - eye/face/hearing/foot/hands/body.
*Electric Arc Welder	Welder Trained. Only authorised / trained persons use welder. Earth cable adequately earthed to work. Electrode holder in good condition/safe Cables, clamps & lugs/connectors in good condition. Area in which welding machine is used is dry/protected from wet. Welder using correct PPE - eye/ face/foot/body/respirator. Correct transparent screens & warning signs placed

*Woodworking Machines	Operators Trained. Only authorised persons use machines. Provided with guards. Guards used. Operators using correct PPE - eye/face/feet/hearing Circular saws strictly operated according to prescribed methods and settings Only prescribed saw blades (cross-cut, ripping blade, smooth cut, aluminium) shall be used for various applications
*Compressors	Relief valves correctly set and locked / sealed. Maximum Safe Working Pressure (MSWP) indicated on face of pressure gauge: not on glass cover. All drives adequately guarded. Receiver/lines drained daily Hoses good condition/clamped, not wired Compressed air NEITHER used to dust off clothing/PPE/ and work areas NOR on bare skin
Concrete Mixer / Batch Plant	Top platform provided with guardrails. Dust abatement methods in use. Operators using correct PPE - eye / hands / respirators. All moving drive parts guarded. Emergency stops identified / indicated and accessible. Area kept clean/dry/and free from tripping and slipping hazards. Operators' overseer identified and crane signals displayed and used.
*Gas Welding / Flame Cutting Equipment	Only authorised/trained persons use the equipment. Torches and gauges in good condition. Flashback arrestors fitted at cylinders and gauges. Hoses in good condition/correct type/all connections with clamps Cylinders stored, used and transported in upright position, secured in trolley / cradle / to structure. All cylinders regularly checked for leaks, leaking cylinders returned immediately Fire prevention/control methods applied/hot work permits

14.17 PLANT & STORAGE YARDS/SITE WORKSHOPS SPECIFICS

Subject	Requirements
Section 8(2)(1) General Machinery Regulation 2(1): Supervision of the Use & Maintenance of Machinery	Person/s with specific knowledge and experience designated in writing to Supervise the Use & Maintenance of Machinery Critical items of Machinery identified/numbered/placed on register/inventory Inspection/maintenance schedules for abovementioned Inspections/maintenance carried out to above schedules Results recorded
General Machinery Regulation 9(2): Notices	Schedule D Notice posted in Work areas

re. Operation of Machinery	
Vessels under Pressure Regulation 13(1)(b): Supervision of the Use & Maintenance of Vessels under Pressure (VuP)	Person/s with specific knowledge and experience designated in writing to Supervise the Use & Maintenance of VuP's VuP's identified/numbered/placed on register/Manufacturers plate intact Inspection/maintenance schedules for abovementioned Inspections/maintenance carried out to above schedules Results recorded/Test certificates available
Lock-out Procedure	Lock-out procedure in operation
Ergonomics	Ergonomics survey conducted – results on record Survey results applied
Demarcation & Colour Coding	Demarcation principles applied All services, pipes, electrical installation, stop-start controls, emergency controls etc. colour coded to own published or SABS standard Employees trained to identify colour coding
Portable & Bench Grinders	Area around grinder clear/trip/slip free Bench grinders mounted securely/grinder generally in good condition/No excessive vibration On/Off switch/button clearly demarcated/accessible Adequate guards in place Tool rest – secure/square/max. 2 mm gap, perpendicular to drive shaft Stone/disk - correct type and size/mounted correctly/dressed Use of Eye protection enforced
Battery Storage & Charging	Adequately ventilated, ignition free room/area/no smoking sign/s Batteries placed on rubber/wooden surface Emergency shower/eye wash provided No acid storage in area Prescribed methods in place and adhered to when charging batteries
Ancillary Lifting Equipment	Chain Blocks/Tirfors/jacks/mobile gantries etc. identified/ numbered on register Chains in good condition/links no excessive wear/checked daily Lifting hooks – throat pop marked/safety latch fitted SWL/MML marked/displayed
Presses/Guillotines/ Shears	Only operated by trained/authorised persons Interlocks/lock-outs fitted/PPE worn or used at all times

14.18 WORKPLACE ENVIRONMENT, HEALTH AND HYGIENE

Subject	Requirement
*Lighting	Adequate lighting in places where work is being executed e.g. stairwells and basements. Light fittings placed / installed causing no irritating/blinding glare. Stroboscopic effect eliminated (not only reduced) where moving objects or machinery is used

*Ventilation	Adequate ventilation / extraction / exhausting in hazardous areas e.g. chemicals / adhesives / welding / petrol or diesel/ motors running and in confined spaces / basements.
*Noise	Tasks identified where noise levels exceeds 85 dB at any one time. All reasonable steps taken to reduce noise levels at the source. Hearing protection used where noise levels could not be reduced to below 85 dB.
*Heat Stress	Measures in place to prevent heat exhaustion in heat stress problem areas e.g. steel decks, when the WBGT index reaches 30. (See Environmental Regulation 4) Cold drinking water readily available at all times.
*Ablutions	Sufficient hygiene facilities provided - 1 toilet per 30 employees (National Building Regulations prescribe chemical toilets for Construction sites) Toilet paper available. Sufficient showers provided. Facilities for washing hands provided Soap/cleaning agent available for washing hands Means of drying hands available Lock-up changing facilities / area provided. Ablution facilities kept hygienic and clean.
*Eating / Cooking Facilities	Adequate storage facilities provided. Weather protected eating area provided, separate from changing area Refuse bins with lids provided. Facilities kept clean and hygienic.
*Pollution of Environment	Measures in place to minimize dust generation. Accumulation or littering of empty cement pockets, plastic wrapping / bags, packing materials etc. prevented. Spillage / discarding of oil, chemicals and dieseline into storm water and other drains or into existing or newly dug holes/cavities on site expressly prohibited.
*Hazardous Chemical Substances	All substances identified and list available e.g. acids, flammables, poisons etc. Material Safety Data Sheets (MSDS) indicating hazardous properties and emergency procedures in case of incident on file and readily available. Substances stored safely. Expiry dates meticulously checked where applicable

THE PRINCIPAL CONTRACTOR'S GENERAL DUTIES

The Principal Contractor shall at all times ensure his status of an "employer" as referred to in the Act, and will abide by his/her responsibilities, duties and functions as per the requirements of the Act and Regulations with specific reference to Section 8 of the Act.

The Principal Contractor shall keep, and on demand make available, a copy of the Act on site at all times and in addition to that he/she will introduce and maintain a file titled "Health and Safety File", or other record in permanent form, which shall contain all relevant aspects and information as contemplated in the Construction Regulations. He/she will make this file available to the client or his representative whenever necessary or on request to an interested party.

THE PRINCIPAL CONTRACTOR'S SPECIFIC DUTIES

The Principal Contractor's specific duties in terms of these specifications are detailed in the Construction Regulations as published under government notice No.R1010 dated 18 July 2003.

The Principal Contractor is specifically referred to the following elements of the Construction Regulations:

Regulation No. 1 - Definitions
Regulation No. 2 - Scope of application
Regulation No. 3 - Notification of construction work
Regulation No. 5 - Principal Contractor and Contractor
Regulation No. 6 - Supervision of construction work
Regulation No. 7 - Risk Assessment
Regulation No. 26 - Stacking & Storage on construction sites
Regulation No. 28 - Construction welfare facilities
Regulation No. 29 - Approved Inspection authorities
Regulation No. 30 - Offences and penalties
This list must not be taken to be exclusive or exhaustive!

The Principal Contractor shall ensure compliance to the Act and its Regulations and specifically to the above regulations, and document each record in the Health and Safety File.

THE PRINCIPAL CONTRACTOR'S SPECIFIC RESPONSIBILITIES WITH REGARD TO HAZARDOUS ACTIVITIES
The following activities are identifiable as hazardous in terms of the Construction Regulations.

The contractor shall execute the activities in accordance with the following Construction Regulations and other applicable regulations of the Act:

Regulation No. 8 - fall protection

Regulation No. 9 - Structures

Regulation No. 10 - Formwork and support work

Regulation No. 11 - Excavation work

Regulation No. 12 - Demolition work

Regulation No. 13 - Tunneling

Regulation No. 14 - Scaffolding

Regulation No. 15 - Suspended platforms

Regulation No. 16 - Boatswain's chairs

Regulation No. 17 - Material hoists

Regulation No. 18 - Batch plants

Regulation No. 19 - Explosive powered tools

Regulation No. 20 - Cranes

Regulation No. 21 - Construction vehicles & mobile plant.

Regulation No. 22 - Electrical installations and machinery on construction sites

Regulation No. 23 - Use and temporary storage of flammable liquids on construction sites

Regulation No. 24 - Water environments

Regulation No. 25 - Housekeeping on construction sites

Regulation No. 27 - Fire precautions on construction sites.

This list must not be taken to be exclusive or exhaustive!

All of the above requirements will be read in conjunction with the relevant regulations and health and safety standards as required by the Act. All documents and records required by the Construction Regulations will be kept in the Health and Safety File and will be made available at any time when required by the client or his representative, or on request to an interested party.

GENERAL NOTES TO THE PRINCIPAL CONTRACTOR

LEGAL FRAMEWORK

The below listed Acts and Principles applies to the State as well as to State owned buildings and premises:
The latest issue of SABS 0142: "Code of Practice for the Wiring of Premises"
The Local Government Ordinance 1939 (Ordinance 17 of 1939) as amended and the municipal by-laws and any special requirements of the local supply authority
The Fire Brigade Services Act 1987, Act 99 of 1987 as amended
The National Building Regulations and Building Standards Act 1977 (Act 103 of 1977) as amended and relevant proclaimed Regulations (SABS 0400)
The Post Office Act 1958 (Act 44 of 1958) as amended
The Electricity Act 1984, Act 41 of 1984
The Regulations of Local Gas Board(s), including Publications of the SABS Standards and Codes of Practice, with specific reference to GNR 17468 dated 4th October 1997;
Legislation pertaining to water usage and the environment;
Legislation governing the use of equipment, which may emit radiation (e.g. X-Rays etc.)
Common Law.

LEGAL LIABILITIES

Common Law is mainly based on the following principles :

Would the reasonable person have foreseen the hazard?

That is a reasonable person in that specific position, taking experience, qualifications, authority, position in the organization etc. into consideration

Would the reasonable person have taken precautionary measures (action) to prevent or limit the hazard?

HOUSE KEEPING

Good housekeeping will be maintained at all times as per Construction Regulation No. 25.

Poor housekeeping contributes to three major problems, namely, costly or increased accidents, fire or fire hazards and reduction in production. Good housekeeping will enhance production time.

Particular emphasis is to be placed on the following crucial elements of a construction site:

Phase priorities and production/plant layout
Enclosures
Pits, openings and shoring
Storage facilities
Effective, sufficient and maintained lighting or illumination
Principal sources of injuries e.g. stairways, runways, ramps, loose building material
Oil, grease, water, waste, rubble, glass, storm water
Color coding
Demarcations
Pollution
Waste disposal
Ablution and hygiene facilities
First aid

This list must not be taken to be exclusive or exhaustive!

In promotion of environmental control all waste, rubble, scrap etc, will be disposed of at a registered dump site and records will be maintained. Where it is found to be impractical to use a registered dump site or it is not available, the Principal Contractor will ensure that the matter is brought to record with the client or his representative, after which suitable, acceptable alternatives will be sought and applied.

Dross and refuse from metals, and waste matters or by-products whose nature is such that they are poisonous or capable of fermentation, putrefaction or constituting a nuisance shall be treated or disposed of by methods approved of by an inspector.

NOTE: No employer (Principal Contractor) shall require or permit any person to work at night or after hours unless there is adequate, suitable artificial lighting including support services in respect of Health and Safety.

LOCKOUT SYSTEMS – ELECTRICAL

A system of control shall be established in order that no unauthorized person can energize a circuit, open a valve, or activate a machine on which people are working or doing maintenance, even if equipment, plant or machinery is out of commission for any period, thus eliminating injuries and damage to people and equipment as far as is reasonably practicable.

Physical/mechanical lock-out systems shall be part of the safety system and included in training. Lockouts shall be tagged and the system tested before commencing with any work or repairs.

INCIDENT INVESTIGATION

Inspection and reporting is the best way in which a responsible contractor can control his area of responsibility. All incidents therefore, irrespective of whether it gave rise to loss, injury, damage or not, shall be investigated and the results recorded in the Health and Safety File. (Attached GAR 9)

GENERAL

The project under control of the Principal Contractor shall be subject to periodic health and safety audits that will be conducted by the client at intervals agreed upon between the Principal Contractor and the client, provided such intervals will not exceed periods of one month.

The Principal Contractor is to ensure that he/she and all persons under his control on the construction site shall adhere to the above specifications, as non-conformance will lead to the client taking action as directed by Construction Regulation 4.1(e).

The Principal Contractor should note that he/she shall be held liable for any anomalies including costs and resulting deficiencies due to delays caused by non-conformance and/or non-compliance to the above Health and Safety Specifications and the Health and Safety Plan based on these specifications.

IMPORTANT LISTS AND RECORDS TO BE KEPT

The following are lists of several records that are to be kept in terms of the Construction Regulations. The lists are:

List of appointments

List of record keeping responsibilities

Inspection checklist

These lists and documents are to be used as a point of reference to determine which components of the Act would be applicable to a particular site or task or project, as was intended under paragraph 1 (“Preamble”) above.

LIST OF APPOINTMENTS

ITEM	Regulation	Appointment	Responsible Person
1.	4(1)(c)	Principal contractor for each phase or project	Client

2.	5.(3)(b)	Contractor	Principal Contractor
3.	5(11)	Contractor	Contractor
4.	6(1)	Construction supervisor	Contractor
5.	6(2)	Construction supervisor sub-ordinates	Contractor
6.	6(6)	Health and Safety Officer	Contractor
7.	7(1)	Person to Carry Out Risk Assessment	Contractor
8.	7(4)	Trainer/Instructor	Contractor
9.	8(1)(a)	Fall Protection Planner	Contractor
10.	10 (a)	Formwork & Support Work Supervisor	Contractor
11.	10(e) + (f)	Formwork & Support Work Examiner	Contractor
12.	11(1)	Excavation Supervisor	Contractor
13.	11(3)(b)(ii)(b)	Professional Engineer or Technologist	Contractor
14.	11(3)(k)	Explosives Expert	Contractor
15.	12(1)	Supervisor Demolition Work	Contractor
16.	12(2) + (3)	Demolition Expert	Contractor
17.	12(11)	Explosives Expert	Contractor
18.	14(2)	Scaffold Supervisor	Contractor
19.	15(1)	Suspended Platform Supervisor	Contractor
20.	15(2)(c)	Compliance Plan Developer	Contractor
21.	15(8)(c)	Suspended Platform Expert	Contractor
22.	15(13)	Outrigger Expert	Contractor
23.	17(8)(a)	Material Hoist Inspector	Contractor
24.	18(1)	Batch Plant Supervisor	Contractor
25.	18(7)	Batch Plant Operator	Contractor
26.	19(2)(b)	Power Tool Expert	Contractor
27.	19.2 (g) (i)	Power Tool Controller	Contractor
28.	20(f)	Tower Crane Operator	Contractor
29.	21(1)(d)(i)	Construction Vehicle and Mobile Plant Operator	Contractor
30.	21(1)(j)	Construction Vehicle and Mobile Plant Inspector	Contractor
31.	22(d)	Temporary Electrical Installations Inspector	Contractor
32.	22 (e)	Temporary Electrical Installations Controller	Contractor
33.	26 (a)	Stacking and Storage Supervisor	Contractor
34.	27 (h)	Fire Equipment Inspector	Contractor

LIST OF RECORD KEEPING RESPONSIBILITIES

item	CR	RECORDS TO BE KEPT	Responsible Person
1.	3(3)	Notification to Provincial Director – Annexure A Available on site	Principal Contractor
2.	4(3)	Copy of Principal Contractor's Health & Safety Plan Available on request	Client
3.	5(6)	Copy of Principal Contractor's Health & Safety Plan As well as each Contractor's Health & Safety Plan Available on request	Principal Contractor

4.	5(7)	Health and Safety File opened and kept on site (including all documentation required into. OHSA & Regulations Available on request	Every Contractor
5.	5(8)	Consolidated Health and Safety File handed to Client on completion of Construction work. To include all documentation required i.e. OHSA & Regulations and records of all drawings, designs, materials used and similar information on the structure	Principal Contractor
6.	5(9)	Comprehensive and Updated List of all Contractors on site, the agreements between the parties and the work being done Included in Health and Safety file and available on request	Principal Contractor
7.	6(7)	Keep record on the Health and Safety File of the input by Construction Safety Officer [CR 6 (7)] at design stage or on the Health and Safety Plan	Contractor
8.	7(2)	Risk Assessment - Available on site for inspection	Contractor
9.	7 (9)	Proof of Health and Safety Induction Training	Every Employee on site
10.	8(3)	Construction Supervisor [CR 6(1)] has latest updated version of Fall Protection Plan [CR 8(1)]	Contractor
11.	9(2)(b)	Inform contractor in writing of dangers and hazards relating to construction work	Designer of Structure
12.	9(3)	All drawings pertaining to the design of structure On site available for inspection	Contractor
13.	9(4)	Record of inspections of the structure [First 2 years – once every 6 months, thereafter yearly] - Available on request	Owner of Structure
14.	9(5)	Maintenance records - safety of structure - Available on request	Owner of Structure
15.	10(d)	Drawings pertaining to the design of formwork/support work structure - Kept on site, available on request	Contractor
16.	11(3)(h)	Record of excavation inspection - On site available on request	Contractor
17.	15(11)	Suspended Platform inspection and performance test records Kept on site available, on request	Contractor
18.	17(8)(c)	Material Hoist daily inspection entered and signed in record book kept on the premises	Contractor
19.	17(8)(d)	Maintenance records for Material Hoist - Available on site	Contractor
20.	18(9)	Records of Batch Plant maintenance and repairs On site available for inspection	Contractor
21.	19(2)(g)(ii)	Issuing and collection of cartridges and nails or studs (Explosive Powered Tools) recorded in register – recipient signed for receipt as well as return	Contractor
22.	21(1)(j)	Findings of daily inspections (prior to use) of Construction Vehicles and Mobile Plant	Contractor
23.	22(d)	Record of temporary electrical installation inspections [once a week] and electrical machinery [daily before use] in a register and kept on site	Contractor
24.	27(l)	Fire Evacuation Plan	Contractor

INSPECTION CHECKLIST

Employer Particulars	
Employer:	
Registered Name of Enterprise:	
Trade Name of Enterprise:	
Company Registration No.:	
SARS Registration No.:	
UIF Registration No.:	
COIDA Registration No.:	
Relevant SETA for EEA purposes:	
Industry Sector:	
Bargaining Council:	
Contact Person:	
Address of Premises:	
Postal Address:	
Telephone Number:	
Fax Number:	
E-mail Address:	
Chief Executive Officer:	
Chief Executive Officer Address:	
Competent Person:	
Maximum power demand: in KW	
Health and Safety Representatives:	
Activities, products manufactured and/ services rendered:	
Raw materials, materials and chemical/ biological substances:	
Total Number of Employees:	Male: Female:

Contractor Particulars	
Contractors:	
Site Address:	
Contracts Manager:	
Managing Director:	
Competent Persons:	
CR14: SCAFFOLDING:	
CR15: SUSPENDED SCAFFOLDING:	
CR17(6): MATERIAL HOIST (S):	
CR18(1): BATCH PLANT:	

CR8(1)(a): FALL PROTECTION:	
CR11(1)(1): EXCAVATION WORK:	
CR12: DEMOLITION WORK:	
CR19(2)(b): EXPLOSIVE POWER TOOLS	
CR26(a): STACKING	

INSPECTION				
SECTION/REGS	ITEM CHECKED	N/A	YES	NO
APPOINTMENTS				
CR6(1)	Supervisor:			
CR6(2)	Assistant Supervisor:			
S17(1)	Health & Safety Representative: (ratio)			
S19(1)	Health & Safety Committees			
CR 12(1)	Demolition Director			
DOCUMENTS				
GAR 9(1)	Records of Incidents			
GAR 4	Copy of the Act			
GAR 7	Safety Reps Report			
GAR 8	Safety Committee Minutes			
DMR 18(7)	Lifting Machinery Log (Crane)			
CR 3(3)	Notification of Construction Work			
CR 7(2)	Risk Assessment			
CR 7(9)(e)	Proof of the Health & Safety Induction Training			
CR 11(13)(h)	Inspection of Excavation (Records)			
CR 20(g)	Crane Operator Medical Certificate			
CR 21(11)	Mobile Plant Operator Medical Certificate			
CR 18(9)	Batch Plant Repairs & Maintenance Records			
CR22(d)	Temporary Electrical Installation Record			
CR 5(7)	Health & Safety File			
CR 15(11)	Suspended Platforms' Performance Records			
CR 17(b)& (c)	Material Hoists Record Book			
IMPROV NOTICE	Scaffolding Log Book			
CR 21(1)(d)(ii)	Medical Certificate of Fitness			
CR 21(1)(I)	Construction Vehicle & Mobile Plant Register			
CR 22(d)	Electrical Installation & Machinery Register			
INCIDENTS				
GAR 8(1) S24	Reported			
GAR 9(1)	Recorded Investigated Action Taken			
PUBLIC SITE				

FR 2(1)	Sanitary Facilities			
CR 28(1) (c)	Changing Facilities for each sex			
CR 25(d)	Perimeter fence & no admittance			
CR 25(e)	Overhead protection netting/falling objects			
NB Notice	Pedestrian warning			
PERSONAL SAFETY EQUIPMENT				
	Items Issued:			
GSR 2(3)	Items Required:			
S23	(What is the payment on each item?)			
SAFETY PLANS				
FIRST AID				
GSR 3(6)	Name(s) of First Aider(s):			
CR 4(1)(3)	Client's Health & Safety Specification			
CR5	Principal's contractor H&S Plan			

FIRE HAZARD & PRECAUTIONS				
GSR 4	Flammables used, waste, hot work, diesel, fuel, gas			
ER 9(1)	Portable Extinguishers			
ELECTRICAL INSTALLATIONS & MACHINERY				
CR22	Guarding & PPE to Electrical Installations			
ILLUMINATION				
ER 3(6)	Dangerous Places and signage as well			
	Housekeeping			
ER6(2)(b),(c),( )	Clear space storage			
ER6(3)	Disposal of waste			
EXCAVATIONS				
CR 11(3)(l)	Barricades (plus illumination!)			
CR 11(3)(c)	Safe Depth Shoring/Bracing			
CR 11(1)(a)	Monitored			
CR 11(3)(h)	Excavation Inspection Record			
GUARDING				
ER 6(2)(f)	Floor Openings (plus illumination!)			
	Floor slab sides, Shafts (plus illumination!)			
SITE EQUIPMENT				
GSR 13A(a)	Ladders condition, secured			
IMPROV	Scaffold condition, secured			
	Platforms no. of boards condition Support 1.25. Toe Boards			
IMPROV	Hand Rails			
SITE MACHINES				
DMR 3(2)(3)	Circulars, guards, riving knives			
DMR 2(a)	Mixers guarded			
ELECTRIC POWER				
EMR 6(1)	Supply Board, condition E.L Relay Test			

GMR 3(1)	Condition of Tools, Leads, Plugs, etc			
LIFTING MACHINE/TACKLE				
DMR 18(8)	Lifting of persons			
DMR 18(8)	Condition, Securing of Load			
EXPLOSIVE POWERED TOOLS				
CR 19(1)	Safe Use and Storage			
IMPROV	Warning Notice			
ROOF WORK				
CR 8(1)	Safety equipment & precautions			
CR 8(2)	Fall protection plan			
CR 8(3)	Updated fall protection plan			
ASBESTOS CEMENT				
AR 10(a)	Suitable Tools			

WARNING: Under no circumstances shall any work of any nature whatsoever on any ASBESTOS material is undertaken unless the work is entrusted and mandated to a "REGISTERED ASBESTOS CONTRACTOR" in terms of the Asbestos Regulations. [CR 12(9)] (Contact the Regional Manager's Office)

HEALTH AND SAFETY FILE COMPILATION AND CONTENTS
(Document attached)

The guidelines and conditions provided in this attached document form an integral constituent of the Health and Safety Specifications. It is therefore a condition of acceptance that no Health and Safety Plan shall be complete unless all relevant elements of this document applicable to the above project have been included in the Health and Safety Plan. The final approval of the Health and Safety Plan in terms of CR 4(2) shall be subject to this requirement based on the following certification by the Principal Contractor or his Agent:

The content of CR 5 is pivotal when mandatary appointments are contemplated.

GUIDE TO THE GENERAL ADMINISTRATIVE REGULATIONS
(Document attached)

IMPORTANT CONTACT DETAILS (HEALTH & SAFETY ONLY) (Document attached)

"ATTACHMENTS"

HEALTH AND SAFETY FILE COMPILATION AND CONTENT

GUIDE TO THE GENERAL ADMINISTRATIVE REGULATIONS

EMERGENCY CONTACT DETAILS - HEALTH & SAFETY ONLY

HEALTH AND SAFETY FILE COMPILATION & CONTENTS

This document serves as a guide to Principle Contractors and Contractors (and their agents) to assist them in complying with the requirements of the Act and more specifically the Construction Regulations and to ensure a most comprehensive Health and Safety File. Kindly note the following extractions from the Construction Regulations:

"Every contractor shall ensure that a health and safety file, which shall include all documentation required in terms of the provisions of the Act and the Regulations, is opened and kept on site and made available to an inspector, client, client's agent or principle contractor upon request. [CR 5(7)]

A Principal Contractor shall hand over a consolidated health and safety file to the client upon completion of the construction work and shall, in addition to the documentation referred to in sub regulation (7) [above], include a record of all drawings, designs, materials used and other similar information concerning the completed structure. [CR 5(8)]

A Principal Contractor shall ensure that in addition to the documentation required in the health and safety file as determined in the two sub regulations above, a comprehensive and updated list of all the contractors on site accountable to the Principal Contractor, the agreements between the parties and the type of work being done are included and available. [CR 5(9)]"

The information, documentation and lists required to be included in the Health and Safety File as contemplated in the Construction Regulations [CR 5(7)], shall be suitably and sufficiently documented in terms of the following items listed below to ensure compliance with the Act as far as is reasonably practicable.

Note: In the event that any of the items listed below may not have reference to the planning, implementation and completion of the work to be done pertaining to the project on the construction site, it must clearly be indicated as such with a proper statement e.g. 'Not Applicable'. All other relevant references or items below shall relate to the information required as contemplated in the Act and Regulations.

IMPORTANT: This Health and Safety File shall be regarded as the property of the Client as it has to be consolidated and handed over to the Client upon completion of the project. The Principal Contractor shall ensure that this file is adequately protected against any form of damage, abuse or fraud.

TYPES OF REGISTERS

Accident/Incident Register (Annexure 1 of the General Administrative Regulations)
H&S Representatives ('SHE - Reps') Inspection Register;
Arc & Gas Welding & Flame Cutting Equipment Inspections;
Inspection of Cranes'
Inspection of Ladders
Inspection of mobile plant and other machinery
Inspections of scaffold
Inspections of hand tools and electrical power tools
Inspection of Vessels under Pressure plus all other excluded under VUP regulations
Firefighting equipment

The H&S Representatives (SHE-Reps) will be required to submit the abovementioned registers as well as other legally required registers, also from the list below, on a monthly basis to the chairman of the H&S committee for submission to, and endorsement by the H&S Committee. Also refer to the suggested Agenda for the H&S Committee under 14.10.3

Documents are as follows:

Full version of the copy of OHSAct (updated) (General Administrative Regulation 4.)
Proof of Registration and good standing with a COID Insurer (CR 4(1)(g)
Appointments – in terms of the Construction Regulations * [See references Page 4]
Notification of Construction Work – Annexure 1 [CR 3]
Scope of work [CR 5(9)]
Records of drawings, designs, materials used and similar information concerning the completed structure [CR 5(8)]
H&S Specifications [CR 4]
H&S Plan – Principal Contractor, Contractor & Sub-contractors [CR 5(1) & (4)]
Proof of Periodic Audits [CR 4, 5 & 6]
List of all Contractors (accountable to Principal Contractor) on site [CR 5(9)]
Contractor Agreements (MANDATORY AGREEMENTS) [CR 5(9)] [section 37(2)]
Input by Construction Safety Officer [CR 6(7)]
Risk Assessment [CR 7(1)]
Copy of Risk Assessment [CR 7(2)]

Medical Certificates of Fitness - Cranes [CR 20(g)]
Medical Certificates of Fitness - Construction vehicles [CR 21(1)(d)(ii)]
Medical Certificates of Fitness – Suspended platforms [CR 15(12)(b)]
Proof of H&S Induction Training [CR 7(4) & (7) & (9)(b)]
Proof of training on Hazards and Work Related Procedures [CR (7(4)]
Fall Protection Plan (building constructions) [CR 8]
Designer notice to contractor of dangers and hazards relating to construction work [CR 9(2)(b)]
Drawings design of structure [CR 9(3)]
Records of Inspections of Structure [CR 9(4)]
Maintenance records – structure safety [CR 9(5)]
Record Excavation Inspection [CR 11(3)(h)]
Method Statement – Excavation Work [CR 11(3)(k)]
Method Statement – Demolition Work [CR 12(2)]
Method Statement – Demolition Work (use of explosives) [CR 12(11)]
Operational Compliance Plan – Suspended Platforms [CR 15(2)(c)]
Certificates, design calculations, sketches and test results [CR 15(3)]
Examination results [CR 15(9)]
Suspended Platform Inspection and Performance Test records [CR 15(11)]
Proof of Training [CR 15(12)(c)]
Proof of Training [CR 12(1)]
Proof of Training [CR 21(1)(d)(i)
Material Hoist Inspections [CR17(8)(c)]
Maintenance Records Material hoist [CR17(8)(d)]
Record Batch Plant Maintenance & Repair [CR18 (9)]
Register for control of cartridges/nails studs – explosive powered tools [CR19(2)(g)(ii)]
Findings and control measures of daily inspections Construction Vehicles & Mobile Plant [CR21(1)(j)]
Record of Temporary Electrical Installation Inspections [CR22(d)]
Record of Electrical Machinery Inspections [CR22(d)]
Proof of Training [CR 27(i)]
Evacuation Plan [CR 27(l)]
H&S Rep & Committee Members details
H&S Committee Meetings' Minutes
Other appointments in terms of OHSAct 85 of 1993

The following further identified requirements in terms of the Act and other Regulations of the Act are similarly applicable as part of the contents of the 'Health and Safety File':

Details of Inspections (by Department of Labor)
Recording and Investigation of Incidents – Annexure 1 [GAR 9(1-3)]
Action taken on all incidents [GAR 9(4)]
Certificates of Competency in First Aid [GSR 3(4)]
Record of Medical Surveillance required in terms of OHASA
Proof of compliance with Asbestos Regulation requirements (WHERE APPLICABLE)
Proof of compliance with Major Hazard Installation requirements

The Appointments to be made in writing with job descriptions as per the Construction Regulations may include some or all of the following:

PRINCIPAL CONTRACTORS- [CR 4(1) (c)]
CONTRACTORS- [CR 5(3) (b) + (11)]
COMPETENT PERSONS- [CR 6(1) + (2)]
CONSTRUCTION SAFETY OFFICER- [CR 6(6)]
RISK ASSESSOR- [CR 7(1) + (4)]
FALL PROTECTION PLANNER- [CR 8(1)(a)]
FORMWORK & SUPPORT SUPERVISOR- [CR 10(a) + (e) + (f)]
EXCAVATION SUPERVISOR- [CR 11(1) + (3)(b)(ii)(b) + (3)(k)]
DEMOLITION SUPERVISOR- [CR 12(1) + (2) + (3) + (11)]
SCAFFOLD SUPERVISOR- [CR 14(2)]
SUSPENDED WORK SUPERVISOR- [CR 15(1) + (2)(c) + (8)(c) + (13)]
MATERIAL HOISTS INSPECTOR- [CR 17(8)(a)]
BATCH PLANT OPERATOR [CR 18(1) + (7)]
EXPLOSIVE POWER TOOLS INSPECTOR- [CR 19(2)(b) + (2)(g)(i)]
CRANE OPERATOR- [CR 20(f)]
CONSTRUCTION VEHICLE OPERATOR- [CR 21(1)(d)(i) + (1)(j)]
ELECTRICAL INSTALLATIONS INSPECTOR- [CR 22(d) + (e)]
STACKING & STORAGE SUPERVISOR- [CR 26(a)]
FIRE EQUIPMENT INSPECTOR- [CR 27(h)]
DESIGNER- [CR 9(2)

EMERGENCY CONTACT DETAILS

The contractor is to add all the important contact information about essentials services, support and assistance.

SERVICE	NUMBER	CONTACT PERSON
 Hospital		
 Ambulance		
 Water		
Electricity		

Police		

Fire Brigade		

Engineer		

ADD OTHER IMPORTANT HEALTH & SAFETY CONTACT DETAILS AS MAY BE FOUND NECESSARY.

GOVERNMENT NOTICE

DEPARTMENT OF LABOUR
No. R. 2003

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993

CONSTRUCTION REGULATIONS, 2003

The Minister of Labour has under section 43 of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), after consultation with the Advisory Council for Occupational Health and Safety, made the regulations in the Schedule.

SCHEDULE

Definitions

1. In these Regulations any word or expression to which a meaning has been assigned in the Act shall have the meaning so assigned and, unless the context otherwise indicates—

“agent” means any person who acts as a representative for a client in the managing the overall construction work.

“angle of repose” means the steepest angle of a surface at which a mass of loose or fragmented material will remain stationary in a pile on a surface, rather than sliding or crumbling away;

“batch plant” means machinery, appliances or other similar devices that are assembled in such a manner so as to be able to mix materials in bulk for the purposes of using the mixed product for construction work;

“client” means any person for whom construction work is performed;

“competent person” in relation to construction work, means any person having the knowledge, training and experience specific to the work or task being performed: Provided that where appropriate qualifications and training are registered in terms of the provisions of the South African Qualifications Authority Act, 1995 (Act No. 58 of 1995), these qualifications and training shall be deemed to be the required qualifications and training;

“construction work” means any work in connection with—

(a) the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;

(b) the installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;

(c) the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or

(d) the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;

“construction vehicle” means a vehicle used for means of conveyance for transporting persons or material or both such persons and material, as the case may be, both on and off the construction site for the purposes of performing construction work;

“contractor” means an employer, as defined in section 1 of the Act, who performs construction work and includes principal contractors;

“design” in relation to any structure includes drawings, calculations, design details and specifications;

“designer” means any person who—

prepares a design;

checks and approves a design;

(c) arranges for any person at work under his control (including an employee of his, where he is the employer) to prepare a design, as well as;

(d) architects and engineers contributing to, or having overall responsibility for the design;

(e) build services engineers designing details for fixed plant;

(f) surveyors specifying articles or drawing up specifications;

(g) contractors carrying out design work as part of a design and build project;

(h) temporary works engineer designing formwork and false work; and

(i) interior designers, shop-fitters and landscape architects.

“ergonomics” means the application of scientific information concerning humans to the design of objects, systems and the environment for human use in order to optimise human well-being and overall system performance;

“excavation work” means the making of any man-made cavity, trench, pit or depression formed by cutting, digging or scooping;

“explosive powered tool” means a tool that is activated by an explosive charge and that is used for driving bolts, nails and similar objects for the purpose of providing fixing;

“fall prevention equipment” means equipment used to prevent persons from falling from an elevated position, including personal equipment, body harness, body belts, lanyards, lifelines or physical equipment, guardrails, screens, barricades, anchorages or similar equipment;

“fall arrest equipment” means equipment used to arrest the person in a fall from an elevated position, including personal equipment, body harness, lanyards, deceleration devices, lifelines or similar equipment, but excludes body belts;

“fall protection plan” means a documented plan, of all risks relating to working from an elevated position, considering the nature of work undertaken, and setting out the procedures and methods to be applied in order to eliminate the risk;

“hazard identification” means the identification and documenting of existing or expected hazards to the health and safety of persons, which are normally associated with the type of construction work being executed or to be executed;

“health and safety file” means a file, or other record in permanent form, containing the information required as contemplated in these regulations;

“health and safety plan ” means a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified;

“health and safety specification” means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons;

“material hoist” means a hoist used to lower or raise material and equipment, and includes cantilevered platform hoists, mobile hoists, friction drive hoists, scaffold hoists, rack and pinion hoists and combination hoists;

“medical certificate of fitness” means a certificate valid for one year issued by an occupational health practitioner, issued in terms of these regulations, whom shall be registered with the Health Professions Council of South Africa;

“method statement” means a written document detailing the key activities to be performed in order to reduce as reasonably as practicable the hazards identified in any risk assessment;

“mobile plant” means machinery, appliances or other similar devices that is able to move independently, for the purpose of performing construction work on the construction site;

“National Building Regulations" means the National Building Regulations made under section 17(1) of the National Building Regulations and Building Standards Act, 1977 (Act No.103 of 1977), and published under Government Notice No. R.1081 of 10 June 1988, as amended;

“person day” means one individual carrying out construction work on a construction site for one normal working shift;

“principal contractor” means an employer, as defined in section 1 of the Act who performs construction work and is appointed by the client to be in overall control and management of a part of or the whole of a construction site;

“professional engineer or professional certificated engineer” means any person holding registration as either a Professional Engineer or Professional Certificated Engineer under the Engineering Profession Act, 2000 (Act No. 46 of 2000);

“professional technologist” means any person holding registration as a Professional Technologist under the Engineering Profession Act, 2000 (Act No. 46 of 2000);

“provincial director” means the provincial director as defined in regulation 1 of the General Adminstrative Regulations under the Act;

“risk assessment” means a programme to determine any risk associated with any hazard at a construction site , in order to identify the steps needed to be taken to remove, reduce or control such hazard;

“roof apex height” means the dimensional height in metres measured from the lowest ground level abutting any part of a building to the highest point of the roof;

“SABS 085” means the South African Bureau of Standards’ Code of Practice entitled
“The Design, Erection, Use and Inspection of Access Scaffolding”;

“SABS 0400” means the South African Bureau of Standards, Code of Practice for the application of the National Building Regulations;

“SABS EN 1808” means the South African Bureau of Standards’ Standard Specification entitled: “Safety requirements on suspended access equipment – Design calculations, stability criteria, construction-tests”;

“SABS 1903” means the South African Bureau of Standards’ Standard Front-end Specification entitled: “Safety requirements on suspended access equipment – Design calculations, stability criteria, construction-tests”;

"scaffold" means any temporary elevated platform and supporting structure used for providing access to and supporting workmen or materials or both;

“shoring” means a structure such as a hydraulic, mechanical or timber/steel shoring system that supports the sides of an excavation and which is intended to prevent the cave-in or the collapse of the sides of an excavation, and “shoring system” has a corresponding meaning;

“structure” means—

(a) any building, steel or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels , road, drainage works, earthworks, dam, wall, mast, tower, tower crane, batching plants, pylon, surface and underground tanks, earth retaining structure or any structure designed to preserve or alter any natural feature, and any other similar structure;

(b) any formwork, false work, scaffold or other structure designed or used to provide support or means of access during construction work; or

(c) any fixed plant in respect of work which includes the installation, commissioning, decommissioning or dismantling and where any such work involves a risk of a person falling two metres or more;

"suspended platform" means a working platform suspended from supports by means of one or more separate ropes from each support;

"the Act" means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);

"tunnelling" means the construction of any tunnel beneath the natural surface of the earth for a purpose other than the searching for or winning of a mineral;

Scope of application

2.(1) These Regulations, shall apply to any persons involved in construction work.

The provisions of sub regulation 4.(1)(a) shall not be applicable where the construction work carried out is in relation to a single storey domestic building for a client who is going to reside in such dwelling upon completion thereof.

The provisions of sub regulations 4.(1)(a) and 5(1), 5.(3)(a) and 5(4) shall not be applicable where the construction work is in progress and more than fifty percent thereof has been completed at the date of promulgation of these regulations: Provided that an inspector may instruct accordingly that these Regulations shall be applicable.

Notification of construction work

3.(1) A principal contractor who intends to carry out any construction work shall—

before carrying out that work, notify the provincial director in writing of the construction work if it includes—

(i) the demolition of a structure exceeding a height of 3 meters; or

(ii) the use of explosives to perform construction work; or

(iii) the dismantling of fixed plant at a height greater than 3m.

before carrying out that work, notify the provincial director in writing when the construction work—

(i) exceeds 30 days or will involve more than 300 person days of construction work; and

(ii) includes excavation work deeper than 1m; or

(iii) includes working at a height greater than 3 meters above ground or a landing.

(2) The notification to the provincial director contemplated in sub regulation (1) must be done on the form similar to Annexure A to these regulations.

(3) A principal contractor shall ensure that a copy of the completed form contemplated in sub regulation (2) is kept on site for inspection by an inspector, client, client's agent or employee.

Client

4.(1) A client shall be responsible for the following in order to ensure compliance with the provisions of the Act—

(a) to prepare a documented health and safety specification for the construction work, and provide any principal contractor who is making a bid or appointed to perform construction work for the client with the same;

(b) to promptly provide the principal contractor and his or her agent with any information which might affect the health and safety of any person at work carrying out construction work;

(c) to appoint each principal contractor in writing for the project or part thereof on a construction site;

(d) to take reasonable steps to ensure that each principal contractor's health and safety plan as determined in sub regulation 5(1) is implemented and maintained on the construction site: Provided that the steps taken, shall include periodic audits at intervals mutually agreed upon between the client and principal contractor, but at least once every month;

(e) to stop any contractor from executing construction work which is not in accordance with the principal contractor's health and safety plan contemplated in sub regulation 5(1) for the site or which poses to be a threat to the health and safety of persons;

(f) to ensure that where changes are brought about, sufficient health and safety information and appropriate resources are made available to the principal contractor to execute the work safely;

to ensure that every principal contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site; and

to ensure that potential principal contractors submitting tenders, have made provision for the cost of health and safety measures during the construction process.

(2) A client shall discuss and negotiate with the principal contractor the contents of the health and safety plan contemplated in sub regulation 5(1) and thereafter finally approve the health and safety plan for implementation.

(3) A client shall ensure that a copy of the principal contractor's health and safety plan is available on request to an employee, inspector or contractor.

(4) No client shall appoint a principal contractor to perform construction work, unless the client is reasonably satisfied that the principal contractor that he or she intends to appoint has the necessary competencies and resources to carry out the work safely.

(5) A client may appoint an agent in writing to act as his or her representative and where such an appointment is made, the responsibilities as are imposed by these regulations upon a client, shall as far as reasonably practicable apply to the person so appointed.

(6) No client shall appoint any person as his agent, unless the client is reasonably satisfied that the person he or she intends to appoint has the necessary competencies and resources to perform the duties imposed on a client by these regulations.

Principal Contractor and Contractor

5. (1) A principal contractor shall provide and demonstrate to the client a suitable and sufficiently documented health and safety plan, based on the client's documented health and safety specification contemplated in regulation 4(1)(a), which shall be applied from the date of commencement of and for the duration of the construction work.

(2) A principal contractor shall take reasonable steps as far as is necessary to ensure co-operation between all contractors to enable each of those contractors to comply with the provisions of these regulations.
(3) A principal contractor shall be responsible for the following in order to ensure compliance with the provisions of the Act—

(a) to provide any contractor who is making a bid or appointed to perform construction work for the principal contractor, with the relevant sections of the documented health and safety specification contemplated in regulation 4(1)(a) pertaining to the construction work which has to be performed;

to appoint each contractor contemplated in paragraph (a) in writing for the part thereof of the project on a construction site;

to take reasonable steps to ensure that each contractor's health and safety plan contemplated in sub regulation (4) is implemented and maintained on the construction site: Provided that the steps taken shall include periodic audits at intervals mutually agreed upon between the principal contractor and contractor(s), but at least once every month;

(d) to stop any contractor from executing construction work which is not in accordance with the principal contractor's and/or contractor's health and safety plan for the site or which poses a threat to the health and safety of persons;

(e) to ensure that where changes are brought about, sufficient health and safety information and appropriate resources are made available to the contractor to execute the work safely;

to ensure that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site; and

to ensure that potential contractors submitting tenders have made provision for the cost of health and safety measures during the construction process.

(4) A contractor shall provide and demonstrate to the principal contractor a suitable and sufficiently documented health and safety plan, based on the relevant sections of the principal contactor's health and safety specification contemplated in regulation 5(3)(a) provided by the principal contractor, which plan shall be applied from the date of commencement of and for the duration of the construction work.

(5) A principal contractor shall discuss and negotiate with the contractor the contents of the health and safety plan contemplated in sub regulation (4), and shall finally approve that plan for implementation.

(6) A principal contractor shall ensure that a copy of his or her health and safety plan contemplated in sub regulation (1), as well as the contractor's health and safety plan contemplated in sub regulation (4), is available on request to an employee, inspector, contractor, client or client's agent.

(7) Every contractor shall ensure that a health and safety file, which shall include all documentation required in terms of the provisions of the Act and these Regulations, is opened and kept on site and made available to an inspector, client, clients agent or principal contractor upon request.

(8) A principal contractor shall hand over a consolidated health and safety file to the client upon completion of the construction work and shall, in addition to the documentation referred to in sub regulation (7), include a record of all drawings, designs, materials used and other similar information concerning the completed structure.

(9) A principal contractor shall ensure that in addition to the documentation required in the health and safety file as determined in sub regulations (7) and (8), a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being done is included and available.

(10) No principal contractor shall appoint a contractor to perform construction work unless the principal contractor is reasonably satisfied that the contractor he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely.

(11) Where a contractor appoints another contractor to perform construction work, the responsibilities as determined in sub regulations (2) to (6) that apply to the principal contractor shall apply to the contractor as if he or she were the principal contractor.

(12) No contractor shall appoint another contractor to perform construction work unless he or she is reasonably satisfied that the contractor he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely.

(13) Contractors shall co-operate with the principal contractor as far as is necessary to enable each of them to comply with the provisions of the Act.

(14) Every contractor shall as far as is reasonably practicable, promptly provide the principal contractor with any information which might affect the health and safety of any person at work carrying out construction work or any person who might be affected by the work of such a person at work or which might justify a review of the health and safety plan.

Supervision of construction work

6.(1) Every contractor shall appoint a full-time competent employee designated in writing as the construction supervisor, with the duty of supervising the performance of the construction work.

(2) The contractor may in writing appoint one or more competent employees to assist the appointed construction supervisor contemplated in sub regulation (1), and every such employee shall, to the extent clearly defined by the contractor in the letter of designation, have the same duties as the construction supervisor: Provided that the designation of any such employee shall not relieve the construction supervisor contemplated in sub regulation (1) of any personal accountability for failing in his supervisory duties referred to in terms of this regulation.

(3) Where the contractor has not appointed an employee as referred to sub regulation (2), or, in the opinion of an inspector, not a sufficient number of such employees, that inspector may require the employer to appoint the number of employees indicated by the inspector, and the provisions of sub regulation (2) shall apply in respect of those employees as if they had in the first instance been appointed under sub regulation (2).

(4) No construction supervisor appointed in terms of sub regulation (1) shall supervise any construction work on or in any construction site other than the site in respect of which he or she has been appointed: Provided that a sufficient number of competent employees have been appropriately designated under sub regulation (2) on all the construction sites, the appointed construction supervisor may supervise more than one site.

(5) If, however, the construction supervisor appointed in terms of sub regulation (1) for more than one construction site will not, in the opinion of an inspector, be able to supervise the works favourably, an inspector may require the contractor to appoint the required number of employees as contemplated in sub regulation (2) to assist the appointed construction supervisor or instruct the contractor to appoint the construction supervisor who had been appointed in terms of sub regulation (1) more appropriately.

(6) A contractor shall upon having considered the size of the project, the degree of dangers likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time or part-time construction safety officer in writing to assist in the control of all safety related aspects on the site: Provided that, where the question arises as to whether a construction safety officer is necessary, the decision of an inspector shall be decisive.

The appointed construction safety officer as contemplated in sub regulation (6) shall as far as is reasonably practicable be utilised to give input at the early design stage and where not appointed at this stage, he or she shall be given the opportunity to input into the health and safety plan when wanting to do so, and a record of such shall be kept in the health and safety file contemplated in regulation 5(7).

(8) No contractor shall appoint a construction safety officer to assist in the control of safety related aspects on the site unless he or she is reasonably satisfied that the construction safety officer he or she intends to appoint, has the necessary competencies and resources to assist the contractor.

Risk assessment

7.(1) Every contractor performing construction work shall before the commencement of any construction work and during construction work, cause a risk assessment to be performed by a competent person appointed in writing and the risk assessment shall form part of the health and safety plan to be applied on the site and shall include at least—

the identification of the risks and hazards to which persons may be exposed to;

(b) the analysis and evaluation of the risks and hazards identified;

(c) a documented plan of safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;

a monitoring plan; and

(e) a review plan.

(2) A contractor shall ensure that a copy of the risk assessment is available on site for inspection by an inspector, client, client's agent, contractor, employee, representative trade union, health and safety representative or any member of the health and safety committee.

(3) Every contractor shall consult with the health and safety committee or, if no health and safety committee exists, with a representative group of employees, on the development, monitoring and review of the risk assessment.

(4) A contractor shall ensure that all employees under the his or her control are informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment.

A principal contractor shall ensure that all contractors are informed regarding any hazard as stipulated in the risk assessment before any work commences, and thereafter at such times as may be determined in the risk assessment.

A contractor shall ensure that as far as is reasonably practicable, ergonomic related hazards are analysed, evaluated and addressed in the risk assessment.

Notwithstanding the requirements laid down in sub regulation (4), no contractor shall allow or permit any employee to enter any site, unless such person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.

A contractor shall ensure that all visitors to a construction site undergoes health and safety instruction pertaining to the hazards prevalent on the site and shall be provided with the necessary personal protective equipment: Provided that where visits are made only to the site office which is not in direct contact with the construction work activities, those health and safety instructions and the provision of personal protective equipment may not apply.

Every employee on site shall-

(a) be in possession of proof of the health and safety induction training as determined in sub regulation (7), issued by a competent person of the contractor prior to the commencement of construction work; and

carry the proof contemplated in paragraph (a) for the duration of that project or for the period that the employee will be on the construction site.

Fall protection

8.(1) A contractor shall cause—

(a) the designation of a competent person, responsible for the preparation of a fall protection plan;

(b) the fall protection plan contemplated in (a) to be implemented, amended where and when necessary and maintained as required;

steps to be taken in order to ensure the continued adherence to the fall protection plan.

(2) The fall protection plan contemplated in sub regulation (1), shall include—

a risk assessment of all work carried out from an elevated position which shall include the procedures and methods used to address all the risks identified per location;

the processes for evaluation of the employees physical and psychological fitness necessary to work at elevated positions and the records thereof;

the programme for the training of employees working from elevated positions and records thereof; and

the procedure addressing the inspection, testing and maintenance of all fall protection equipment.

(3) A contractor shall ensure that the construction supervisor appointed in terms of regulation 6(1), is in possession of the most recently updated version of the fall protection plan.

(4) Notwithstanding the provisions of sub regulations (1) and (2), the contractor shall ensure that—

(a) all unprotected openings in floors, edges, slabs, hatchways and stairways are adequately guarded, fenced or barricaded or that similar means are used to safeguard any person from falling through such openings;

(b) no person works in an elevated position, unless such work is performed safely as if working from a scaffold or ladder;

(c) notices are conspicuously placed at all openings where the possibility exists that a person might fall through such openings;

(d) fall prevention and fall arrest equipment is—

(i) suitable and of sufficient strength for the purpose or purposes for which it is being used having regard to the work being carried out and the load, including any person, it is intended to bear; and

(ii) securely attached to a structure or plant and the structure or plant and the means of attachment thereto is suitable and of sufficient strength and stability for the purpose of safely supporting the equipment and any person who is liable to fall;

fall arrest equipment shall only be used where it is not reasonably practicable to use fall prevention equipment; and

(f) suitable and sufficient steps shall be taken to ensure, as far as is reasonably practicable, that in the event of a fall by any person, the fall arrest equipment or the surrounding environment does not cause injury to the person.

(5) Where roof work is being performed on a construction site, the contractor shall ensure that in addition to the requirements set out in sub regulations (2) and (4), it is furthermore indicated in the fall protection plan—

that the roof work has been properly planned;

that the roof erectors are competent to carry out the work;

that no employees are permitted to work on roofs during inclement weather conditions or if weather conditions are a hazard to the health and safety of the employees;

that prominent warning notices are to be placed where all covers to openings are not of sufficient strength to withstand any imposed loads and where fragile material exists;

that the areas mentioned in paragraph (d) are to be barricaded off to prevent persons from entering;

that suitable and sufficient platforms, coverings or other similar means of support have been provided to be used in such a way that the weight of any person passing across or working on or from fragile material is supported; and

that there is suitable and sufficient guard-rails or barriers and toe-boards or other similar means of protection to prevent, so far as is reasonably practicable, the fall of any person, material or equipment.

Structures

9.(1) A contractor shall ensure that—

(a) all reasonably practicable steps are taken to prevent the uncontrolled collapse of any new or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work; and

(b) no structure or part of a structure is loaded in a manner which would render it unsafe.

(2) The designer of a structure shall—

before the contract is put out to tender, make available to the client all relevant information about the design of the relevant structure that may affect the pricing of the construction work;

inform the contractor in writing of any known or anticipated dangers or hazards relating to the construction work, and make available all relevant information required for the safe execution of the work upon being designed or when the design is subsequently altered;

subject to the provisions of paragraph (a) and (b) ensure that the following information is included in a report and made available to the contractor—

(i) a geo-science technical report where appropriate;

(ii) the loading the structure is designed to withstand; and

(iii) the methods and sequence of construction.

not include anything in the design of the structure necessitating the use of dangerous procedures or materials hazardous to the health and safety of persons, which could be avoided by modifying the design or by substituting materials;

(e) take into account the hazards relating to any subsequent maintenance of the relevant structure and should make provision in the design for that work to be performed to minimise the risk;

(f) carry out sufficient inspections at appropriate times of the construction work involving the design of the relevant structure in order to ensure compliance with the design and a record of those inspections is to be kept on site;

(g) stop any contractor from executing any construction work which is not in accordance with the relevant design;

conduct a final inspection of the completed structure prior to its commissioning in order to render it safe for use and issue a completion certificate to the contractor; and

ensure that when preparing the design, cognisance is taken of ergonomic design principles in order to minimise ergonomic related hazards in all phases of the life cycle of a structure.

A contractor shall ensure that all drawings pertaining to the design of the relevant structure are kept on site and are available on request by an inspector, contractors, client, client's agent or employee.

(4) Any owner of a structure shall ensure that inspections of that structure upon completion are carried out periodically by competent persons in order to render the structure safe for continued use: Provided that the inspections are carried out at least once every six months for the first two years and thereafter yearly and records of such inspections are kept and made available to an inspector upon request.

(5) Any owner of a structure shall ensure that the structure upon completion is maintained in such a manner that the structure remains safe for continued use and such maintenance records shall be kept and made available to an inspector upon request.

Formwork and support work

10. A contractor shall ensure that—

(a) all formwork and support work operations are carried out under the supervision of a competent person who has been appointed in writing for that purpose;

(b) all formwork and support work structures are adequately designed, erected, supported, braced and maintained so that they will be capable of supporting all anticipated vertical and lateral loads that may be applied to them and also that no loads are imposed onto the structure that the structure is not designed to withstand;

(c) the designs of formwork and support work structures are done upon close reference to the structural design drawings and where any uncertainty exists, the structural designer should be consulted;

(d) all drawings pertaining to the design of formwork or support work structures are kept on the site and are available on request by an inspector, contractor, client, client's agent or employee;

(e) all equipment used in the formwork or support work structure are carefully examined and checked for suitability by a competent person, before being used;

(f) all formwork and support work structures are inspected by a competent person immediately before, during and after the placement of concrete or any other imposed load and thereafter on a daily basis until the formwork and support work structure has been removed and the results have been recorded in a register and made available on site;

(g) if, after erection, any formwork and support work structure is found to be damaged or weakened to such a degree that its integrity is affected, it shall be safely removed or reinforced immediately;

(h) adequate precautionary measures are taken in order to—

(i) secure any deck panels against displacement; and

(ii) prevent any person from slipping on support work or formwork due to the application of formwork or support work release agents;

(i) as far as is reasonably practicable, the health of any person is not affected through the use of solvents or oils or any other similar substances;

upon casting concrete, the support work or formwork structure should be left in place until the concrete has acquired sufficient strength to support safely, not only its own weight, but also any imposed loads and not removed until authorisation has been given by the competent person contemplated in paragraph (a);

(k) provision is made for safe access by means of secured ladders or staircases for all work to be carried out above the foundation bearing level;

(l) all employees required to erect, move or dismantle formwork and support work structures are provided with adequate training and instruction to perform these operations safely; and

(m) the foundation conditions are suitable to withstand the weight caused by the formwork and support work structure and any imposed loads such that the formwork and support work structure is stable.

Excavation work

11.(1) A contractor shall ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing.

(2) A contractor shall evaluate, as far as is reasonably practicable, the stability of the ground before excavation work begins.

(3) Every contractor who performs excavation work shall—

(a) take suitable and sufficient steps in order to prevent, as far as is reasonably practicable, any person from being buried or trapped by a fall or dislodgement of material in an excavation;

(b) not require or permit any person to work in an excavation which has not been adequately shored or braced: Provided that shoring and bracing may not be necessary where—

(i) the sides of the excavation are sloped to at least the maximum angle of repose measured relative to the horizontal plane; or

(ii) such an excavation is in stable material: Provided that—

(aa) permission being given in writing by the appointed competent person contemplated in sub regulation (1) upon evaluation by him or her of the site conditions; and

(bb) where any uncertainty pertaining to the stability of the soil still exists, the decision from a professional engineer or a professional technologist competent in excavations shall be decisive and such a decision shall be noted in writing and signed by both the competent person contemplated in sub regulation (1) and the professional engineer or technologist, as the case may be;

(c) take steps to ensure that the shoring or bracing contemplated in paragraph (b) is designed and constructed in such a manner rendering it strong enough to support the sides of the excavation in question;

(d) ensure that no load, material, plant or equipment is placed or moved near the edge of any excavation where it is likely to cause its collapse and thereby endangering the safety of, any person, unless precautions such as the provision of sufficient and suitable shoring or bracing are taken to prevent the sides from collapsing;

(e) ensure that where the stability of an adjoining building, structure or road is likely to be affected by the making of an excavation, the steps are taken that may be necessary to ensure the stability of such building, structure or road and the safety of persons;

(f) cause convenient and safe means of access to be provided to every excavation in which persons are required to work and such access shall not be further than 6m from the point where any worker within the excavation is working;

(g) ascertain as far as is reasonably practicable the location and nature of electricity, water, gas or other similar services which may in any way be affected by the work to be performed, and shall before the commencement of excavation work that may affect any such service, take the steps that may be necessary to render the circumstances safe for all persons involved;

(h) cause every excavation, including all bracing and shoring, to be inspected—

(i) daily, prior to each shift;

(ii) after every blasting operation;

(iii) after an unexpected fall of ground;

(iv) after substantial damage to supports; and

(v) after rain,

by the competent person contemplated in sub regulation (1), in order to pronounce the safety of the excavation to ensure the safety of persons, and those results are to be recorded in a register kept on site and made available to an inspector, client, client's agent, contractor or employee upon request;

(i) cause every excavation which is accessible to the public or which is adjacent to public roads or thoroughfares, or whereby the safety of persons may be endangered, to be—

(i) adequately protected by a barrier or fence of at least one meter in height and as close to the excavation as is practicable; and

(ii) provided with warning illuminants or any other clearly visible boundary indicators at night or when visibility is poor;

(j) ensure that all precautionary measures as stipulated for confined spaces as determined in the General Safety Regulations promulgated by Government Notice No.R.1031 of 30 May 1986, as amended, are complied with when entering any excavation;

(k) ensure that, where the excavation work involves the use of explosives, a method statement is developed in accordance with the applicable explosives legislation, by an appointed person who is competent in the use of explosives for excavation work and that the procedures therein are followed; and

(l) cause warning signs to be positioned next to an excavation within which persons are working or carrying out inspections or tests.

Demolition work

12.(1) A contractor shall appoint a competent person in writing to supervise and control all demolition work on site.

(2) A contractor shall ensure that prior to any demolition work being carried out, and in order also to ascertain the method of demolition to be used, a detailed structural engineering survey of the structure to be demolished is carried out by a competent person and that a method statement on the procedure to be followed in demolishing the structure is developed.

(3) During the demolition, a competent person shall check the structural integrity of the structure at intervals determined in the method statement contemplated in sub regulation (2), in order to avoid any premature collapses.

(4) Every contractor who performs demolition work shall—

(a) with regard to a structure being demolished, take steps to ensure that—

(i) no floor, roof or other part of the structure is overloaded with debris or material in a manner which would render it unsafe;

(ii) all reasonably practicable precautions are taken to avoid the danger of the structure collapsing when any part of the framing of a framed or partly framed building is removed, or when reinforced concrete is cut; and

(iii) precautions are taken in the form of adequate shoring or such other means as may be necessary to prevent the accidental collapse of any part of the structure or adjoining structure;

(b) not require or permit any person to work under unsupported overhanging material, which has not been adequately supported, shored or braced;

(c) take steps to ensure that any support, shoring or bracing contemplated in paragraph (b), is designed and constructed so that it is strong enough to support the overhanging material;

(d) where the stability of an adjoining building, structure or road is likely to be affected by demolition work on a structure, take such steps as may be necessary to ensure the stability of such structure or road and the safety of persons;

(e) ascertain as far as is reasonably practicable the location and nature of electricity, water, gas or other similar services which may in anyway, be affected by the work to be performed, and shall before the commencement of demolition work that may affect any such service, take the steps that may be necessary to render circumstances safe for all persons involved;

(f) cause every stairwell used and every floor where work is being performed in a building being demolished, to be adequately illuminated by either natural or artificial means;

(g) cause convenient and safe means of access to be provided to every part of the demolition site in which persons are required to work; and

(h) erect a catch platform or net above an entrance or passageway or above a place where persons work or pass under, or fence off the danger area if work is being performed above such entrance, passageway, or place so as to ensure that all persons are kept safe where there is a danger or possibility of persons being struck by falling objects.

(5) A contractor shall ensure that no material is dropped to any point, which falls outside the exterior walls of the structure, unless the area is effectively protected.

(6) Waste and debris shall not be disposed from a high place by a chute unless the chute—

(a) is adequately constructed and rigidly fastened;

(b) if inclined at an angle of more than 45 degrees to the horizontal, is enclosed on its four sides;

(c) if of the open type, is inclined at an angle of less than 45 degrees to the horizontal;

(d) where necessary, is fitted with a gate at the bottom end to control the flow of material; and

(e) is discharged into a container or an enclosed area surrounded by barriers.

(7) A contractor shall ensure that every chute used to dispose of rubble is designed in such a manner that rubble does not free-fall and that the chute is strong enough to withstand the force of the debris travelling along the chute.

(8) A contractor shall ensure that equipment is not used on floors or working surfaces, unless such floors or surfaces are of sufficient strength to support the imposed loads.

(9) Where the risk assessment indicates the presence of asbestos, a contractor shall ensure that all asbestos related work is conducted in accordance with the provisions of the, Asbestos Regulations promulgated by Government Notice No.R.155 of 10 February 2002, as amended.

(10) Where the risk assessment indicates the presence of lead, a contractor shall ensure that all lead related work is conducted in accordance with the provisions of the, Lead Regulations promulgated by Government Notice No.R.236 of 28 February 2002 , as amended.

(11) Where the demolition work involves the use of explosives, a method statement is to be developed in accordance with the applicable explosives legislation, by an appointed person who is competent in the use of explosives for demolition work and the procedures therein are adhered to.

(12) A contractor shall ensure that all waste and debris is as soon as reasonably practicable removed and disposed of from the site in accordance with the applicable legislation.

Tunnelling

13.(1) Any contractor performing tunneling activities or works, shall comply with such requirements as published under the Mine Health and Safety Act, 1996 (Act No.29 of 1996), as amended.

(2) Notwithstanding the provisions of sub regulation (1), no person shall enter a tunnel, which has a height dimension less than 800mm.

Scaffolding

14.(1) Every contractor using access scaffolding, shall ensure that such scaffolding, when used, complies with the safety standards incorporated for this purpose into these Regulations under section 44 of the Act.

(2) A contractor shall ensure that all scaffolding work operations are carried out under the supervision of a competent person who has been appointed in writing and that all scaffold erectors, team leaders and inspectors are competent to carry out their work.

Suspended platforms

15.(1) A contractor shall ensure that all suspended platform work operations are carried out under the supervision of a competent person who has been appointed in writing, and that all suspended platform erectors, operators and inspectors are competent to carry out their work.

(2) No contractor shall use or permit the use of a suspended platform, unless—

(a) the design, stability and construction thereof comply with the safety standards incorporated for this purpose into these Regulations under section 44 of the Act;

(b) in possession of a certificate of system design issued by a professional engineer, certificated engineer or a professional technologist for the use of the suspended platform system; and

(c) he or she is, prior to the commencement of the work, is in possession of an operational compliance plan developed by a competent person based on the certificate of system design contemplated in paragraph (b) and applicable to the environment in which the system is being used, prior to the commencement of the work which must include proof of the—

(i) competent person who has been appointed for supervision;

(ii) competency of erectors, operators and inspectors;

operational design calculations which should comply with the requirements of the system design certificate;

(iv) performance test results;

(v) sketches indicating the completed system with the operational loading capacity of the platform;

(vi) procedures for and records of inspections having been carried out; and

procedures for and records of maintenance work having been carried out:

Provided that sub regulation (2) shall only become applicable six months from the date of promulgation of these regulations.

(3) A contractor making use of a suspended platform system shall forward a copy of the certificate of system design issued by a professional engineer, certificated engineer or professional technologist including a copy of the design calculations, sketches and test results, to the provincial director before commencement of the use of the system and must further indicate the intended type of work, the system would be used for.

(4) A contractor need not re-submit a copy of the certificate of system design contemplated in sub regulation (3) for every new project: Provided that the environment in which the system is being used does not change to such an extent that the system design certificate is no longer applicable and, should uncertainty exist of the applicability of the system design certificate, the decision of a professional engineer, certificated engineer or professional technologist shall be decisive.

(5) A contractor shall ensure that the outriggers of each suspended platform—

(a) are constructed of steel or any other material of similar strength and have a safety factor of at least four in relation to the load it is to carry; and

(b) have suspension points provided with stop devices or other effective devices at the outer ends to prevent the displacement of ropes.

The contractor shall ensure that—

(a) the parts of the building or structure on which the outriggers are supported, are checked by means of calculations to ensure that the required safety factor is adhered to without risk of damage to the building or structure;

(b) the suspension wire rope and the safety wire rope are separately connected to the outrigger;

(c) each person on a suspended platform is provided with and wears a safety harness as a fall prevention device which must at all times, be attached to the suspended platform or to the anchorage points on the structure whilst on the suspended platform;

(d) the hand or power driven machinery to be used for the lifting or lowering of the working platform of a suspended platform is constructed and maintained in such a manner that an uncontrolled movement of the working platform cannot occur;

(e) the machinery referred to in paragraph (d) is so situated that it is easily accessible for inspection;

(f) the rope connections to the outriggers are vertically above the connections to the working platform; and

(g) where the working platform is suspended by two ropes only, the connections of the ropes to the working platform are of such height above the level of the working platform as to ensure the stability of the working platform.

(7) A contractor shall ensure that the suspended platform—

(a) is suspended as near as possible to the structure to which work is being done and, except when light work is being done, is secured at every working position to prevent horizontal movement between the suspended platform and the structure;

(b) is fitted with anchorage points to which workers shall attach the lanyard of the safety harness worn and used by the worker and such anchorage connections shall have sufficient strength to withstand any potential load applied to it; and

(c) is fitted with a conspicuous notice easily understandable by all workers working with the suspended platform, showing the maximum mass load which the suspended platform can carry.

(8) A contractor shall cause—

(a) the whole installation and all working parts of the suspended platform to be thoroughly examined in accordance with the manufacturer's specification;

(b) the whole installation to be subjected to a performance test as determined by the standard to which the suspended platform was manufactured;

(c) the performance test contemplated in paragraph (b) to be done by a competent person appointed in writing with the knowledge and experience of erection and maintenance of suspended platforms or similar machinery and who shall determine the serviceability of the structures, ropes, machinery and safety devices before they are used following every time they are erected;

(d) the performance test contemplated in paragraph (b) of the whole installation of the suspended platform shall be subjected to a load equal to that prescribed by the manufacturer or, in the absence of such load, to a load of 110 per cent of the rated mass load, at intervals not exceeding 12 months and in such a manner that every part of the installation is stressed accordingly;

(9) Notwithstanding the provisions of sub regulation (8), the contractor shall cause every hoisting rope, hook or other load-attaching device which forms part of the suspended platform to be thoroughly examined in accordance with the manufacturer's specification by the competent person contemplated in sub regulation (8) before they are used following every time they are assembled, and, in cases of continuous use, at intervals not exceeding three months.

(10) A contractor shall ensure that the suspended platform supervisor appointed in terms of the provisions of sub regulation (1), or the suspended platform inspector mentioned in sub regulation (1), carries out a daily inspection of all the equipment prior to use, including establishing whether—

(a) all connection bolts are secure;

(b) all safety devices are functioning;

(c) all safety devices are not tampered with or vandalised;

(d) the maximum mass load of the platform is not exceeded;

(e) the occupants in the suspended platform are using safety harnesses which have been properly attached;

(f) there are no visible signs of damage to the equipment; and

(g) all reported operating problems have been attended to.

(11) A contractor shall ensure that all inspection and performance test records are kept on the construction site at all times and made available to an inspector, client, client's agent or employee upon request.

(12) A contractor shall ensure that all employees required to work or to be supported on a suspended platform are—

(a) physically and psychologically fit to work safely in such an environment by being in possession of a medical certificate of fitness;

(b) competent in conducting their work safely relating to suspended platforms and the training which employees receive or had received must include at least—

(i) how to access and egress the suspended platform safely;

(ii) how to correctly operate the controls and safety devices of the equipment;

(iii) information on the dangers related to the misuse of safety devices; and

(iv) information on the procedures to be followed in the case of—

(aa) an emergency;

the malfunctioning of equipment;

(cc) the discovery of a suspected defect in the equipment; and

(v) instructions on the proper use of safety harnesses.

(13) Where the outrigger is to be moved, the contractor shall ensure that only persons trained and competent to effect such move, perform this task and that an inspection be carried out and the results thereof be recorded by the competent person prior to re-use of the suspended platform.

(14) A contractor shall ensure that the suspended platform is properly isolated after use at the end of each working day such that no part of the suspended platform will present a danger to any person thereafter.

Boatswain's chairs

16.(1) A contractor shall ensure that every boatswain's chair or similar device is securely suspended and is constructed in such a manner so as to prevent any occupant from falling therefrom.

(2) The contractor shall ensure that an inspection is carried out prior and a performance test immediately after, the boatswain chair has been erected and thereafter a visual inspection should be carried out on a daily basis prior to use.

Material hoists

17.(1) A contractor shall ensure that every material hoist and its tower have been constructed of sound material in accordance with the generally accepted technical standards and are strong enough and free from defects.

(2) A contractor shall cause the tower of every material hoist to be—

(a) erected on firm foundations and secured to the structure or braced by steel wire guy ropes and to extend to such a distance above the highest landing as to allow a clear and unobstructed space of at least 900 mm for overtravel;

(b) enclosed on all sides at the bottom, and at all floors where persons are at risk of being struck by moving parts of the hoist, except on the side or sides giving access to the material hoist, with walls or other effective means to a height of at least 2100 mm from the ground or floor level; and

(c) provided with a door or gate at least 2100 mm in height at each landing and such door or gate shall be kept closed, except when the platform is at rest at such a landing.

(3) A contractor shall cause—

(a) the platform of every material hoist to be designed in such a manner that it shall safely contain the loads being conveyed and that the combined weight of the platform and the load does not exceed the designed lifting capacity of the hoist;

(b) the hoisting rope of every material hoist which has a remote winch to be effectively protected from damage by any external cause to the portion of the hoisting rope between the winch and the tower of the hoist; and

(c) every material hoist to be provided with an efficient brake capable of holding the platform with its maximum load in any position when the power is not being supplied to the hoisting machinery.

(4) No contractor shall require or permit trucks, barrows or material to be conveyed on the platform of a material hoist and no person shall so convey trucks, barrows or material unless such articles are so secured or contained in such a manner that displacement thereof cannot take place during movement.

(5) A contractor shall cause a notice, indicating the maximum mass load which may be carried at any one time and the prohibition of persons from riding on the platform of the material hoist, to be affixed around the base of the tower and at each landing.

(6) A contractor of a material hoist shall not require or permit any person to operate such a hoist, unless the person is competent in the operation thereof.

(7) No contractor shall require or permit any person to ride on a material hoist.

(8) A contractor shall cause every material hoist—

(a) to be inspected on a daily basis by a competent person who has been appointed in writing and has the experience pertaining to the erection and maintenance of material hoists or similar machinery.

(b) inspection contemplated in paragraph (a), to include the determination of the serviceability of the entire material hoist including guides, ropes and their connections, drums, sheaves or pulleys and all safety devices.

(c) inspection result to be entered and signed in a record book which shall be kept on the premises for that purpose.

(d) to be properly maintained and that the maintenance records in this regard are kept on site.

Batch plants

18.(1) A contractor shall ensure that all batch plants are operated and supervised by a competent person who has been appointed in writing.

(2) A contractor shall ensure that the placement and erection of a batch plant complies with the requirements set out by the manufacturer and that such plant is erected as designed.

(3) A contractor shall ensure that all devices to start and stop a batch plant are provided and that these devices are—

(a) placed in an easily accessible position; and

(b) constructed in such a manner as to prevent accidental starting.

(4) The contractor shall ensure that the machinery and plant selected is suitable for the task and that all dangerous moving parts of a mixer are placed beyond the reach of persons by means of doors, covers or other similar means.
(5) No person shall be permitted to remove or modify any guard or safety equipment relating to a batch plant, unless authorised to do so by the appointed person as contemplated in sub regulation (1).

(6) A contractor shall ensure that all persons authorised to operate the batch plant are fully—

(a) aware of all the dangers involved in the operation thereof; and

(b) conversant with the precautionary measures to be taken in the interest of health and safety.

(7) No person supervising or operating a batch plant shall authorise any other person to operate the plant, unless such person is competent to operate such machinery.

(8) A contractor shall ensure that all precautionary measures as stipulated for confined spaces in the General Safety Regulations promulgated by Government Notice No.R.1031 dated 30 May 1986, as amended, are adhered to when entering any silo.

(9) A contractor shall ensure that a record is kept of any repairs or maintenance to a batch plant and that it is made available, on site, to an inspector, client, client's agent or employee upon request.

(10) A contractor shall ensure that all lifting machines and lifting tackle used in the operation of a batch plant complies with the requirements of the Driven Machinery Regulations promulgated by Government Notice No.R.295 dated 26 February 1988, as amended;

(11) A contractor shall ensure that all precautionary measures are adhered to regarding the usage of electrical equipment in explosive atmospheres, when entering a silo, as contemplated in the Electrical Installation Regulations promulgated by Government Notice No.R. 2920 dated 23 October 1992, as amended.

Explosive powered tools

19.(1) No contractor shall use or permit any person to use an explosive powered tool, unless—

(a) it is provided with a protective guard around the muzzle end, which effectively confines any flying fragments or particles; and

(b) the firing mechanism is so designed that the explosive powered tool will not function unless—

(i) it is held against the surface with a force of at least twice its weight; and

(ii) the angle of inclination of the barrel to the work surface is not more than 15 degrees from a right angle:

Provided that the provisions of this sub regulation shall not apply to explosive powered tools in which the energy of the cartridge is transmitted to the bolts, nails or similar relevant objects by means of an intermediate piston which has a limited distance of travel.

(2) A contractor shall ensure that—

(a) only cartridges suited for the explosive powered tool and the work to be performed are used;

(b) the explosive powered tool is cleaned and examined daily before use and as often as may be necessary for its safe operation by a competent person who has been appointed;

(c) that the safety devices are in proper working order prior to use;

(d) when not in use, the explosive powered tool and the cartridges are locked up in a safe place, which is inaccessible to unauthorised persons;

(e) the explosive powered tool is not stored in a loaded condition;

(f) a warning notice is displayed in a conspicuous manner wherever the explosive powered tool is used;

(g) the issuing and collection of cartridges and nails or studs is-

(i) controlled and done in writing by a person having been appointed in writing; and

(ii) recorded in a register and that the recipient has accordingly signed for the receipt thereof as well as the returning of any spent and unspent cartridges;

(3) No contractor shall permit or require any person to use an explosive powered tool unless such person has been—

(a) provided with and uses suitable protective equipment; and

(b) trained in the operation, maintenance and use of such a tool.

Cranes

20. Notwithstanding the provisions of the Driven Machinery Regulations promulgated by Government Notice No.R.295 of 26 February 1988, as amended, a contractor shall ensure that where tower cranes are used—

(a) account is taken of the effects of wind forces on the structure;

(b) account is taken of the bearing capacity of the ground on which the tower crane is to stand;

(c) the bases for the tower cranes and tracks for rail-mounted tower cranes are firm and level;

(d) the tower cranes are erected at a safe distance from excavations;

(e) there is sufficient clear space available for erection, operation and dismantling;

(f) the tower crane operators are competent to carry out the work safely; and

(g) the tower crane operators are physically and psychologically fit to work in such an environment by being in possession of a medical certificate of fitness.

Construction vehicles and mobile plant

21.(1) A contractor shall ensure that all construction vehicles and mobile plants—

(a) are of an acceptable design and construction;

(b) are maintained in a good working order;

(c) are used in accordance with their design and the intention for which they where designed, having due regard to safety and health;

(d) are operated by workers who-

(i) have received appropriate training and been certified competent and been authorised to operate such machinery; and

(ii) are physically and psychologically fit to operate such construction vehicles and mobile plant by being in possession of a medical certificate of fitness;

(e) have safe and suitable means of access;

(f) are properly organised and controlled in any work situation by providing adequate signaling or other control arrangements to guard against the dangers relating to the movement of vehicles and plant, in order to ensure their continued safe operation;

(g) are prevented from falling into excavations, water or any other area lower than the working surface by installing adequate edge protection, which may include guardrails and crash barriers;

(h) where appropriate, are fitted with structures designed to protect the operator from falling material or from being crushed should the vehicle or mobile plant overturn;

(i) are equipped with an electrically operated acoustic signaling device and a reversing alarm; and

(j) are on a daily basis inspected prior to use, by a competent person who has been appointed in writing and the findings of such inspection is recorded in a register.

(2) A Contractor shall furthermore ensure that—
(a) no person rides or be required or permitted to ride on any construction vehicle or mobile plant otherwise than in a safe place provided thereon for that purpose;
(b) every construction site is organised in such a way that, as far as is reasonably practicable, pedestrians and vehicles can move safely and without risks to health;
(c) the traffic routes are suitable for the persons using them, sufficient in number, in suitable positions and of sufficient size;
(d) every traffic route is, where necessary indicated by suitable signs for reasons of health or safety;
(e) all construction vehicles and mobile plant left unattended at night, adjacent to a freeway in normal use or adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, in order to identify the location of the vehicles or plant;
(f) bulldozers, scrapers, loaders, and other similar mobile plant are, when being repaired or when not in use, fully lowered or blocked with controls in a neutral position, motors stopped and brakes set;
(g) whenever visibility conditions warrant additional lighting, all mobile plant are equipped with at least two headlights and two taillights when in operation;
(h) tools and material are secured in order to prevent movement when transported in the same compartment with employees;
(i) vehicles used to transport employees have seats firmly secured and adequate for the number of employees to be carried; and
(j) when workers are working on or adjacent to public roads, reflective indicators are provided and worn by the workers.

Electrical installations and machinery on construction sites

22.Notwithstanding the provisions contained in the Electrical Installation Regulations promulgated by Government Notice No.R.2920 of 23 October 1992 and the Electrical Machinery Regulations promulgated by Government Notice No. R.1593 of 12 August 1988, respectively, as amended, a contractor shall ensure that—

(a) before construction commences and during the progress thereof, adequate steps are taken to ascertain the presence of and guard against danger to workers from any electrical cable or apparatus which is under, over or on the site;

(b) all parts of electrical installations and machinery are of adequate strength to withstand the working conditions on construction sites;

(c) in working areas where the exact location of underground electric power lines is unknown, employees using jackhammers, shovels or other hand tools which may make contact with a power line, are provided with insulated protective gloves or otherwise that the handle of the tool being used is insulated;

(d) all temporary electrical installations are inspected at least once a week and electrical machinery on a daily basis before use on a construction site by competent persons and the records of these inspections are recorded in a register to be kept on site; and

(e) the control of all temporary electrical installations on the construction site is designated to a competent person who has been appointed in writing.

Use and temporary storage of flammable liquids on construction sites

23. Notwithstanding the provisions for the use and storage of flammable liquids as determined in the General Safety Regulations promulgated by Government Notice No.R1031 dated 30 May 1986, as amended, a contractor shall ensure that—

where flammable liquids are being used, applied or stored at the workplace concerned, this is done in such a manner which would cause no fire or explosion hazard, and that the workplace is effectively ventilated: Provided that where the workplace cannot effectively be ventilated-

(i) every employee involved is provided with a respirator, mask or breathing apparatus of a type approved by the chief inspector, and

(ii) steps are taken to ensure that every such employee, while using or applying flammable liquid, uses the apparatus supplied to him or her;

(b) no person smokes in any place in which flammable liquid is used or stored, and such contractor shall affix a suitable and conspicuous notice at all entrances to any such areas prohibiting such smoking;

(c) flammable liquids on a construction site is stored in a well ventilated reasonably fire resistant container, cage or room and kept locked with proper access control measures in place;

(d) an adequate amount of efficient fire-fighting equipment is installed in suitable locations around the flammable liquids store with the recognised symbolic signs;

(e) only the quantity of flammable liquid needed for work on one day is to be taken out of the store for use;

(f) all containers holding flammable liquids are kept tightly closed when not in actual use and, after their contents have been used up, to be removed from the construction site and safely disposed of;

(g) where flammable liquids are decanted, the metal containers are bonded or earthed; and

(h) no flammable material such as cotton waste, paper, cleaning rags or similar material is stored together with flammable liquids.

Water environments

24. (1) A contractor shall ensure that where construction work is done over or in close proximity to water, provision is made for—

(a) preventing workers from falling into water; and

(b) the rescuing of workers in danger of drowning.

(2) A contractor shall ensure that where a worker is exposed to the risk of drowning by falling into the water, a lifejacket is provided to and worn by the worker.

Housekeeping on construction sites

25. Notwithstanding the provisions of the Environmental Regulations for Workplaces promulgated by Government Notice No.R 2281 dated 16 October 1987, as amended, a contractor shall ensure that—

(a) suitable housekeeping is continuously implemented on each construction site, including provisions for the—

(i) proper storage of materials and equipment; and

(ii) removal of scrap, waste and debris at appropriate intervals;

(b) loose materials required for use, are not placed or allowed to accumulate on the site so as to obstruct means of access to and egress from workplaces and passageways;

(c) waste and debris are not disposed of from a high place with a chute, unless the chute complies with the requirements set out regulation 12(6); and

(d) construction sites in built–up areas, adjacent to a public way are suitably and sufficiently fenced off and provided with controlled access points to prevent the entry of unauthorised persons.

(e) a catch platform or net is erected above an entrance or passageway or above a place where persons work or pass under, or fence off the danger area if work is being performed above such entrance, passageway, or place so as to ensure that all persons are kept safe where there is a danger or possibility of persons being struck by falling objects.

Stacking and storage on construction sites

26. Notwithstanding the provisions for the stacking of articles contained in the General Safety Regulations promulgated by Government Notice No.R1031 dated 30 May 1986, as amended, a contractor shall ensure that—

(a) a competent person is appointed in writing with the duty of supervising all stacking and storage on a construction site;

(b) adequate storage areas are provided;

(c) there are demarcated storage areas; and

(d) storage areas are kept neat and under control.

Fire precautions on construction sites

27. Subject to the provisions of the Environmental Regulations for Workplaces promulgated by Government Notice No.R.2281 of 16 October 1987, as amended, every contractor shall ensure that—

(a) all appropriate measures are taken to avoid the risk of fire;

(b) sufficient and suitable storage is provided for flammable liquids, solids and gases;

(c) smoking is prohibited and notices in this regard are prominently displayed in all places containing readily combustible or flammable materials;

(d) in confined spaces and other places in which flammable gases, vapours or dust can cause danger—

(i) only suitably protected electrical installations and equipment, including portable lights, are used;

(ii) there are no flames or similar means of ignition;

(iii) there are conspicuous notices prohibiting smoking;

(iv) oily rags, waste and other substances liable to ignite are without delay removed to a safe place; and

(v) adequate ventilation is provided;

(e) combustible materials do not accumulate on the construction site;

(f) welding, flame cutting and other hot work are done only after the appropriate precautions as required have been taken to reduce the risk of fire;

(g) suitable and sufficient fire-extinguishing equipment is placed at strategic locations or as may be recommended by the Fire Chief or local authority concerned, and that such equipment is maintained in a good working order;

(h) the fire equipment contemplated in paragraph (g) is inspected by a competent person, who has been appointed in writing, in the manner indicated by the manufacturer thereof;

(i) a sufficient number of workers are trained in the use of fire-extinguishing equipment;

(j) where appropriate, suitable visual signs are provided to clearly indicate the escape routes in the case of a fire;

(k) the means of escape is kept clear at all times;

(l) there is an effective evacuation plan providing for all—

(i) persons to be evacuated speedily without panic;

(ii) persons to be accounted for, and

(iii) plant and processes to be shut down; and

(m) a siren is installed and sounded in the event of a fire.

Construction welfare facilities

28. (1) Notwithstanding the construction site provisions contained in the Facilities Regulations promulgated by Government Notice No.R. 2362 of 5 October 1990, as amended, a contractor shall, depending on the number of workers and the duration of the work, provide at or within reasonable access of every construction site, the following clean and maintained facilities:—

(a) at least one shower facility for every 15 workers;

(b) at least one sanitary facility for every 30 workers;

(c) changing facilities for each sex; and

(d) sheltered eating areas.

A contractor shall provide reasonable and suitable living accommodation for the workers at construction sites which are remote from their homes and where adequate transportation between the site and their homes, or other suitable living accommodation, is not available.

Approved inspection authorities

29. (1) The Chief Inspector may approve as an Inspection Authority any organisation that has been accredited in terms of the provision of the Act and these regulations.

(2) The Chief Inspector may at any time withdraw any approval of an approved inspection authority, subject to section 35 of the Act.

Offences and penalties

30. Any person who contravenes or fails to comply with any of the provisions of regulations 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 and 28, shall be guilty of an offence and liable upon conviction to a fine or to imprisonment for a maximum of 12 months and, in the case of a continuous offence, to an additional fine of R200 for each day on which the offence continues or additional imprisonment of one day for each day on which the offence continues: Provided that the period of such additional imprisonment shall not exceed 90 days.

Repeal of regulations

31. The following regulations are herewith repealed:

(a) Regulations 11, 12, 13, 13C, 13D, 13E, 13F and 13G of the, General Safety Regulations promulgated by Government Notice No.R.1031 of 30 May 1986;

(b) Regulations 19 and 20 of the, Driven Machinery Regulations promulgated by Government Notice No.R.295 of 26 February 1988; and

(c) Regulations 14 of the, General Administrative Regulations promulgated by Government Notice No.R.1449 of 6 September 1996.

Short title

32. These regulations shall be known as the Construction Regulations, 2003.

ANNEXURE A

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993
Regulation 3 of the Construction Regulations, 2003

NOTIFICATION OF CONSTRUCTION WORK

1.(a) Name and postal address of principal contractor:
_____

(b) Name and tel. no of principal contractor's contact person:
_____

Principal contractor's compensation registration number: _____

3.(a) Name and postal address of client:
_____

(b) Name and tel no of client's contact person or agent:
_____

4.(a) Name and postal address of designer(s) for the project:
_____

(b) Name and tel. no of designer(s) contact person:
_____

Name and telephone number of principal contractor's construction supervisor on site appointed in terms of regulation 6.(1).
_____

Name/s of principal contractor's sub-ordinate supervisors on site appointed in terms of regulation 6.(2).
_____

Exact physical address of the construction site or site office:
_____

Nature of the construction work:
_____
_____
_____

9. Expected commencement date: _____
10. Expected completion date: _____
11. Estimated maximum number of persons on the construction site. _____
12. Planned number of contractors on the construction site accountable to principal contractor: _____
13. Name(s) of contractors already chosen.

_____
_____
_____

_____ _____
Principal Contractor Date

_____ _____
Client Date

THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF LABOUR PRIOR TO COMMENCEMENT OF WORK ON SITE.

ALL PRINCIPAL CONTRACTORS THAT QUALIFY TO NOTIFY MUST DO SO EVEN IF ANOTHER PRINCIPAL CONTRACTOR ON THE SAME SITE HAD DONE SO PRIOR TO THE COMMENCEMENT OF WORK.

GOVERNMENT NOTICE

DEPARTMENT OF LABOUR
No. R. 2003

Occupational Health and Safety Act, 1993
Incorporation of Safety Standards in the Construction Regulations, 2003

Under section 44 of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), I, Membathisi Mphumzi Sherpard Mdladlana, Minister of Labour, after consultation with the Advisory Council for Occupational Health and Safety, hereby incorporate in the Construction Regulations, 2003 the health and safety standards specified in the Schedule.

M M S Mdladlana Minister of Labour.

SCHEDULE

1. Regulation 14(1)
The South African Bureau of Standards' Code of Practice SABS 085, as amended, entitled
"The Design, Erection, Use and Inspection of Access Scaffolding".

2. Regulation 15(2)(a)
The South African Bureau of Standards' Standard Specification SABS EN 1808, as amended, entitled" Safety Requirements on Suspended Access Equipment – Design calculations, stability criteria, construction-tests".

The South African Bureau of Standards' Standard Front-end Specification SABS 1903, as amended, entitled "Safety Requirements on Suspended Access Equipment – Design calculations, stability criteria, construction-tests".

Department of Labour

GUIDE TO THE GENERAL ADMINISTRATIVE REGULATIONS, 2003

Chief Directorate

of

Occupational Health and Safety

INTRODUCTION

As the name of the regulation indicates, the General Administrative Regulations determines the administrative procedure of the Occupational Health and Safety Act. This procedure was not placed in the Act itself owing to the fact that changes can be made to a Regulation with greater ease than that of a Section in the Act. A change to a Section of the Act needs to be passed by parliament whereas the Minister of the relevant Department can approve a change in a Regulation.

The General Administrative Regulations, as is the case with all other regulations, is an extension of the Act and should therefore be seen as a complete unit.

Terms, which were previously defined in the Act, are not redefined in the Regulations. If a specific definition does not appear in the Regulations, then it should be available in Section 1 of the Act.

DEFINITIONS

All new phrases as well as words (expressions and words which differ from the standard dictionary definitions) that are used in this regulation, which have not been defined in the Act, will be defined in this regulation. Where the Act or regulation refers to “mean” the definition in the Act or regulation must be considered and where there’s reference made to “It Includes” definition from the Act and regulation including the oxford dictionary must be considered

ACCESS TO PREMISES

It is prohibited for an employer to refuse an inspector entry to perform his or her function because an inspector is entitled by the law to enter employer’s workplace.

Employers should always ensure that inspectors are accompanied by a person who has knowledge and experience of the activities and safety requirements of the workplace.

EXEMPTIONS

Any exemption, which has been granted to any person, shall be signed by the Chief Inspector of the Department of Labour. An person who wishes to apply for an exemption should forward his/her application to the office of the Chief Inspector in Pretoria. The application for exemption should indicate proof that the health and safety of persons who are likely to be affected by the exemption will not bee prejudiced in consequences of it. Health and safety representatives and committees must be consulted during the whole process and given time to comment.

COPY OF THE ACT

Employees together with employers have certain duties and rights, which have been assigned to them in terms of the Act. In order to comply with the provisions of the Act and regulations, each employee must have access to a copy of the Act. This regulation requires that—

Each employer with 5 or more employees shall have a copy of at least one Act, which will be made readily available for perusal by the employee. Owing in the fact that a workplace can be made up of a very large area, and that the legislator did not intend to be unreasonable, various concessions are made. For example, a meter-reader in the town of Brits' workplace is the Municipal area of Brits. In such a case it is expected that a copy of the Act be made available at the point where the employee reports for duty in the morning, or any other suitable position as agreed upon with the employer.

Each employer with less than 5 employees, shall, if requested provide a copy of the Act for perusal by the employees. This includes farm workers and domestic servants.

The copy of the Act may be an electronic reproduction or from a library. The Act and Regulations are amended from time to time, and it is therefore important to remember that one must obtain a copy of the latest amendments to keep up to date with the current legislation.

HEALTH AND SAFETY COMMITTEES

Health and Safety committees are made up of all the Health and Safety Representatives together with an equal amount of employer appointee representatives to represent the employer (there can be more than one committee to avoid a large congregation of representatives). If more than two committees are established, each health and safety representative must be member of at least one of the committees. These committees are the point around which self-regulation revolves.

Employer should provide necessary equipment, facilities and stationary required by the committee in order them to perform their functions.

It is important to keep the records of the meeting as they can be used as evidence for action taken to eliminate hazards and vice versa

NEGOTIATIONS AND CONSULTATIONS BEFORE DESIGNATION OF HEALTH AND SAFETY REPRESENTATIVES

The regulation prescribes the items which must be agreed upon during negotiations between the employer and employees representatives. If a dispute arises between the employees and employers or his authorised representative, the matter should be referred for arbitration. Both parties shall submit a statement within a prescribed period to both the arbitrator and the other party concerned.

The statement is to contain the following information:

The proposal for the arrangements and procedures for the nomination of the Health and Safety Representatives.

The decision which is sought.

The arbitrator should then:

Determine when and where the arbitration procedure shall be held. The arbitration may be held in the absence of the party who failed to submit a statement to the arbitrator and other party;

Determine whether a pre-hearing conference shall be held;

Determine which arbitration procedures shall be followed;

Determine the procedures for the admission of evidence;

Determine the admissibility of hearsay evidence; and

Determine other relevant procedural matters.

In terms of Section 17(2) of the Act both parties are to come to a decision within 14 days as to who the arbitrator shall be. If no decision can be made, the president of the Labour Court is to be notified in writing. The president of the Labour Court in consultation with the Chief Inspector shall appoint an arbitrator, whose decision shall be final. This arbitrator will be entitled to receive remuneration as is payable to an additional member of the Labour Court.

DESIGNATION OF HEALTH AND SAFETY REPRESENTATIVES

The employer must designate Health and Safety Representatives as follows:

Shops and offices— one for up to 100 employees; and

Workplaces other than shops and offices— one for up to 50 employees.

The employer shall ensure that employees designated as health and safety representatives meet the following requirements:

Employed in a full-time capacity in the specific workplace or section thereof;

Acquainted with conditions and activities at that workplace or section thereof, and

Taking into account the nature of hazards associated with the activities of the workplace or section thereof, the employer shall provide as far as is reasonable practicable health and safety training to the health and safety representatives on how to identify health and safety risks and how to conduct inspections of the workplace or section thereof.

REPORTING OF INCIDENTS AND OCCUPATIONAL DISEASES

Section 24 of the Act refers to certain incidents occurring at the workplace, or in connection with the use of machinery whereby a person dies or is injured to be extent where he is likely to die or could have resulted in a major incident. Such incidents should be reported to the Provincial Director on a WCL 1 or WCL 2 form within seven days.

Certain other types of incidents must be reported to the Provincial Director telephonically, facsimile or similar means of communication and these types of incidents are as follows—

Where a person, as a result of the incident;
Dies;
Becomes unconscious;
Suffers the loss of a limb or part thereof;
Is injured to the extent that he is likely to die;
Is injured to the extent that he is likely to be permanently disabled;
Is injured to the extent that he is likely to be off for a period of 14 days or more;
Cannot perform his normal duties (those duties for which he was employed).

An incident of major consequence arising out of the use of industrial equipment or machinery or industrial practices at a workplace.

The health and safety of any person is endangered and where –

A dangerous substance was spilled;
The uncontrolled release of any substance under pressure (pressure greater than 1 atmosphere) took place;
Machinery or any part thereof fractured or failed, resulting in flying, falling or uncontrolled moving objects; or
Machines, which ran out of control

These incidents should also be recorded and investigated in accordance to Regulation 8 of the General Administrative Regulations.

If an injured person is to die as a result of an incident, which has already been reported in terms of the above, the employer or user should report such death to the Provincial Director.

Any registered medical practitioner should, in terms of Section 25 of the Act, report all (to the employer and Chief Inspector) cases of occupational diseases or any other disease, which he believes arose out of a person's employment, which he/she has treated. This must be done within 14 days in the form of a WCL 22 form.

Any other person may in writing, give notice of any disease suspected to be an occupational disease, to the employer and chief inspector.

RECORDING AND INVESTIGATION OF INCIDENTS

The employer or user of machinery should keep record and investigate all incidents referred to in terms of Section 24 of the Act together with any other incident, which resulted in the person concerned having had to receive medical treatment other than first aid.

These incidents must be recorded in the form of Annexure 1 of these regulations and be kept for a period of at least 3 years. This record shall be kept on the premises and available for perusal by an inspector.

The employer, a designated person, a health and safety representative or a member of the health and safety committee must investigate the above-mentioned incidents. This investigation should take place within 7 days from the date of incident and completed as soon as is reasonable practicable or within the contracted period of contract workers.

The employer should record the result of the investigation in the Annexure 1. The purpose of the investigation is to establish the cause of the incident together with the safety measures that can be implemented to prevent the re-occurrence of such incidents in the future.

The health and safety committee shall examine this record at their next meeting.
WITNESS AT AN INQUIRY

The chief inspector can, in terms of Section 32, direct an inspector to hold a formal inquiry as a result of an incident reported in terms of Section 24 (refer to Regulation 6). In such an instance, the inspector shall inform the employer or user of machinery of his intentions, and request the following from him/her:

That all persons witness to the incident; and

That any other person as required by the inspector be notified in connection with the time, date and venue of the formal inquiry.

The employer or user of machinery is to establish which persons are likely not to attend the inquiry, and shall advise the inspector of the names and addresses of such persons to allow the inspector to subpoena such persons.

RETURNS
An employer or user shall furnish the inspector with such information as requested for the purpose of the Administration of the Act.