# PROVINCIAL ADMINISTRATION OF KWAZULU-NATAL
# DEPARTMENT OF HEALTH

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

# BILLS OF QUANTITIES

with GCC for Construction Works - Second Edition 2010

## ***RETURNABLE DOCUMENT***

ONE VOLUME APPROACH

## St. Mary's Hospital – Nurse's Residence Generator Replacement

**Project Leader**
KZN Department of Health - Infrastructure Development
eThekwini Management Hub
Sydenham
eThekwini
4000
0663011802 - Tel Number
justin.pillay@kznhealth.gov.za

**Employer:**
Head: Department of Health
KZN Department of Health
Private Bag X 9051
**Pietermaritzburg**
3200
Tel Number: 033 - 940 2400

| | | | |
|---|---|---|---|
| Tender Number: | ZNB 5245/2023-H | Closing Date: | 07 November 2023 |
| CIDB Grading: | 4EB OR 4EP | Contract Period: | 9 Calendar Months |

Contracting Party: _____

CIDB Registration number: _____

Central Suppliers Database Registration Number: _____

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

KWAZULU-NATAL PROVINCE
HEALTH
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# THE TENDER

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## IMPORTANT NOTICE TO TENDERERS

Any reference to words Tender or Tenderder herein and/or in any other documentation shall be construed to have the same meaning as the words Tender or Tenderer. These forms are for internal and external use for the KZN Department of Health, Provincial Administration of KwaZulu-Natal.

**"Quality**" shall mean totality of features and characteristics of a product or service that bears on the ability of the product or service to satisfy stated or implied needs.

**No alternative Tenders will be accepted.**

**The Total (Including Value Added Tax) on the Final Summary of the Bill of Quantities must be carried to the "Offer" part only of the Form of Offer and Acceptance - T2.21**

**"Enterprise" shall mean the legal Tenderding Entity or Tenderder who, on acceptance of the Offer, would become the contractor"**

**All amendments issued for this tender must be downloaded from the website stated in the tender advertisment.**

**Tenderers are to ensure that all returnable documents as stated in T2.1, items 1 to 5, are submitted to avoid disqualification. Furthermore, tenderers are to ensure that all documents stated in T2.1, item 6, are submitted in order to be evaluated for functionality as per the requirements of T2.36.**

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# The Tender

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# PART T1. - TENDER PROCEDURES

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# T1.1 - TENDER NOTICE AND INVITATION TO TENDER

# T1.1 TENDER NOTICE AND INVITATION TO TENDER

**THE KZN DEPARTMENT OF HEALTH INVITES TENDERS FOR THE PROVISION OF:**

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |
| **Advertisement date:** | **29 September 2023** | **Closing date:** | **07 November 2023** |
| **Closing time:** | **11:00** | **Validity period:** | **84 Days** |

It is estimated that tenderers must have a CIDB contractor grading designation of 4EB OR 4EP or higher. No alternative Class of work, as refered to in Clause 25(3)(a)(i) of the CIDB Regulations, as amended, is anticipated for this project.

| | |
|---|---|
| X | All Tenderer's should have a CIDB Class of Construction Contractor Grading Designation as indicated above. No Tenderer with a PE status will be considered as the Department does not have an Official Mentorship Programme in place to assist a Potentially Emerging Enterprise. |

**Only Tenderder's who are responsive to the following responsiveness criteria are eligible to submit Tenders:**

| | |
|---|---|
| X | 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, or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations for a :<br>4EB OR 4EP or higher, class of construction work, are eligible to have their Tenders evaluated. |
| X | Joint ventures are eligible to submit tenders provided that:<br>1 every member of the joint venture is registered with the CIDB;<br>2 the lead partner has a contractor grading designation in the 4EB OR 4EP or higher, class of construction work; or<br>3 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 :<br>**4EB OR 4EP** or a value determined in accordance with Regulation 25 (1B) or 25 (7A) of the Construction Industry Development Regulations. |
| X | Tender document must be properly received on or before the tender closing date and time specified on the invitation, fully completed and signed in ink (All as per Standard Conditions of Tender). |
| X | Submission of Compulsory Returnable Schedules documents as per List of returnable documents. |
| X | Tax Compliance Status (TCS) PIN number and Tenderder's or entity tax reference number. |
| X | Contractor's Safety, Health and Environmental Declaration. |
| X | Complete priced Bill of Quantities to be submitted. |
| X | Proof of good standing with the Compensation Commissioner - In terms of Section 84(1)(b) of the Compensation for Occupation Injuries and Disease Act, 1993, a Tenderder may not be awarded a contract if he/she is not registered and in good standing with the Compensation Commissioner. |
| | Proof of UIF Registration - Not Applicable (T2.24) |
| X | Compulsory Enterprise Questionnaire (T2.18) |
| X | **Tenderers must meet the minimum qualifying score for functionality criteria first before they can be considered for price and preference.** |
| X | Invitation to Tender - SBD 1 |

THE FOLLOWING PARTICULARS MUST BE FURNISHED (FAILURE TO DO SO MAY RESULT IN YOUR TENDER BEING DISQUALIFIED)

Name of Tenderer: _____

Postal Address: _____

Street Address: _____

Telephone Number CODE _____ NUMBER _____

Cellphone Number: _____

E-mail Address: _____

VAT Registration Number: _____

TAX COMPLIANCE STATUS (TCS) PIN TO VERIFY ON LINE COMPLIANCE SUPPLIER STATUS VIA SARS e-FILING (T2.19) YES ☐ or NO ☐

ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS / SERVICES / WORKS OFFERED? [If yes, enclose proof] YES ☐ or NO ☐

**THE TENDER SHALL BE EVALUATED IN THREE (3) STAGES. THE STAGES ARE AS FOLLOWS:**

STAGE 1 - Administrative compliance: All mandatory returnable documents have been submitted and are compliant; the tender documentation has been fully completed and signed. This must include mandatory requirements as indicated below (T2.1), if applicable. The bidder who did not submit administrative and mandatory requirements will be treated as non-responsive and will not progress to the next evaluation stage

STAGE 2 - Evaluation of functionality criteria: As stated in T2.36 (if applicable). Tenderers are required to submit the stated documents and achieve the minimum stated score to proceed to the next Stage of evaluation. The bidder who did not submit administrative and mandatory requirements will be treated as non-responsive and will not progress to the next evaluation stage

STAGE 3 - Evaluation of price and preference points

**Notes**

**T2.1: Returnable Documentation**

List of returnable documents include the following:

- Returnable schedules required for tender evaluation purposes
- Documents required for the evaluation of mandatory technical criteria (if applicable)
- Documents required for the evaluation of functionality

This tender will be evaluated according to the preferential procurement model in the Preferential Procurement Policy Framework Act, 2000: Preferential Procurement Regulations, 2022:

☒ 80/20 Preference point scoring system ☐ 90/10 Preference point scoring system

| **NOTE** | Refer to T2.36 - Functionality Criteria | | |
|---|---|---|---|
| Functionality requirement: | | 60 | Points |
| Price: | | 80 | points |
| Preference point scoring system will be based on the following points: | | | |
| **Preference points system:**<br>**Preferences are offered to Tenderder's who have attained the following in accordance with the table below:** | | | |
| **1.** | **Specific goals (according to the PPPFA):** | | |
| (a) | In terms of Race, full, partial or combination of points may be allocated to companies who are at least 51% Owned by Black People | 20 | Points |
| **Total** must equal **10 or 20 points** | | **20** | Points |

**Notes**:

1 The successful Tenderder will be required to sign a contract.

2 Tenderders should ensure that Tenders are delivered timeously to the correct address. If the Tender is late, it will not be accepted for consideration.

3 The Tender box is generally open during official working hours.

4 All Tenders must be submitted on the official forms – (Not to be re-typed)

5 THIS TENDER IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT FOR CONSTRUCTION WORKS (GCC2010) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT

6 Where stated in the tender data that a two-envelope system has been followed, open only the non-financial proposal of valid tenders in the presence of tenderer's 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.

7 Evaluate that non-financial 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 are to be opened.

8 Open only the financial proposals of tenderers who, in the Functionality evaluation score, have more than the minimum number of points for Functionality stated in the tender data, and announce the score obtained for the non-financial proposals and the total price and any preferences claimed. Return unopened financial proposals to tenderers whose non-financial proposals failed to achieve the minimum number of points for Functionality.

## THE PHYSICAL ADDRESS FOR COLLECTION OF TENDER DOCUMENTS:

Tender documents may be collected during working hours at the following address :

**Department of Health Central Supply Chain 310 Jabu Ndlovu Street, Pietermaritzburg,3200**

A non-refundable tender deposit of R is payable as per the tender advertisement , on collection of the Tender documents.

## COMPULSORY CLARIFICATION MEETING

It is vital that a technically qualified and knowledgeable member from the tenderer's firm attends the compulsory site clarification meeting.

A Compulsory clarification Meeting with representatives of the Employer will take place as follows:

**St Mary's Hospital - 1 Hospital Road, Abbot Francis Rd, Mariannhill, 3605**
**Nurse's Residence Parking area**

on: **Wednesday, 18 October 2023**

## QUERIES REGARDING THE TENDERING PROCEDURE OR TECHNICAL INFORMATION MAY BE DIRECTED TO:

| | | | |
|---|---|---|---|
| DOH Project Manager: | Justin Pillay | **Telephone no:** | 0663011802 |
| **Cell no:** | 0663011802 | | |
| **E-mail:** | justin.pillay@kznhealth.gov.za | | |

## DEPOSIT / RETURN OF TENDER DOCUMENTS:

Telegraphic, telephonic, telex, facsimile, electronic, posted and / or late tenders will not be accepted.

Requirements for sealing, addressing, delivery, opening and assessment of tenders are stated in the **Tender Data document.**

All tenders must be submitted on the official forms – (not to be re-typed)

## TENDER DOCUMENTS MAY BE:

| **DEPOSITED IN THE TENDER BOX AT:** |
|---|
| Tender Advisory Services<br>Supply Chain Management, Head Office<br>310 Jabu Ndlovu Street<br>Pietermaritzburg<br>3200 |

KWAZULU-NATAL PROVINCE
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**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# T1.2 - TENDER DATA

# T1.2 TENDER DATA

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Project Code:** | **222728** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Closing date:** | **07 November 2023** |
| **Closing time:** | **11:00** | **Validity period:** | **84 Days** |

| **Clause number:** | | |
|---|---|---|
| | The conditions of Tender are the Standard Conditions of Tender as contained in Annexure C of the CIDB Standard for Uniformity in Engineering and Construction Works Contracts as per Board Notice **423 of 2019** in Government Gazette **42622 of 8 August 2019** as amended from time to time (see www.cidb.org.za). Refer to Conditions of Tender as contained within this document.<br>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.<br>Each item of data given below is cross-referenced to the clause marked "C" in the above mentioned Standard Conditions of Tender. | |
| C.1.1 | For this contract the single volume approach is adopted.<br>This procurement document has been formatted and compiled under the headings for a single volume approach as contained in table 5 of the CIDB's "Standard for Uniformity in Engineering and Construction Works Contracts."<br><br>The list of Returnable Documents identifies which of the documents a Tenderder must complete when submitting a Tender. The Tenderder must submit his Tender by completing the Returnable Documents including the priced Final Summary of the Bills of Quantities, signing the "Offer" section in the "Form of Offer and Acceptance" and delivering the whole of the procurement document back to the Department bound up as it was when it was received. | |
| C.1.2 | The single volume procurement document issued by the Employer comprises the following: | |
| | **TENDER** | |
| | **Part T1: Tendering procedures** | |
| | T1.1 - | Tender Notice and Invitation to Tender |
| | T1.2 - | Tender Data |
| | T1.3 - | Annexure C - Standard Conditions of Tender |
| | **Part T2: Returnable documents** | |
| | T2.1 - | List of returnable documents |
| | T2.2 - | Returnable schedules (See different forms listed in ***T2.1 - Returnable Schedule***) |
| | **CONTRACT** | |
| | **Part C1: Agreements and Contract Data** | |
| | C1.1 - | Form of Offer and Acceptance |
| | C1.2 - | Contract Data |
| | C1.3 - | Form of Guarantee |
| | | |
| | **Part C2: Pricing data** | |
| | C2.1 - | Pricing Instructions |
| | C2.2 - | Bills of Quantities |
| | | |
| | **Part C3: Scope of works** | |
| | C3.1 - | Scope of Works |
| | C3.2 - | Specification for HIV/AIDS awareness |
| | C3.3 - | HIV/STI Compliance report |
| | C3.4 - | Project Specific Construction Safety, Health and Environmental Specification |
| | C3.5 - | Supplementary Preambles |

| | | |
|---|---|---|
| | **Part C4: Site information** | |
| | C4.1 - | Site Information |
| | C4.2 - | DEPARTMENT OF HEALTH - GENERATOR COMMISSIONING CHECK SHEET OCT 2020 Rev 1 |
| | | |
| | **Part 5: List of Drawings/Annexure's** | |
| | C5.1 - | List of Drawings |
| | C5.2 - | Joint Venture Agreement |
| | C5.3 - | Health and Safety Bill of Quantities |
| | C5.4 - | Builders Lien Agreement |
| | C5.5 - | Map of Tender submission location |
| | C5.6 - | DOH Standard Preambles to all trades 2009 |
| | C5.7 - | KZN DOH Generator Preventative Maintenance Service Programme - Annual Bi-Annual Service |
| | C5.8 - | DEPARTMENT OF HEALTH - GENERATOR PRE-DELIVERY SHEET REV 3.2 OCT 2020 |
| | C5.9 - | DEPARTMENT OF HEALTH - GENERATOR COMMISSIONING CHECK SHEET OCT 2020 Rev 1 |
| | C5.10 | DEPARTMENT OF HEALTH - GENERATOR MANUALS CHECK SHEET OCT 2020 Rev 1 |
| | C5.11 | Annexure 10 - Project Specifications -St. Mary's Hospital – Nurses Residence Generator Replacement |
| | C5.12 | Annexure 11 - T2.32-33-34 OSHE St. Mary's Hospital – Nurse's Residence Generator Replacement |
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| C.1.4 | The Employer's agent (Engineer/Principal Agent) is: | |
| | Name: | **KZN Department of Health - Infrastructure Development** |
| | Capacity: | **Project Leader** |
| | Address: | **eThekwini Management Hub , Sydenham , eThekwini , 4000** |
| | Tel: | **0663011802** |
| | E-mail: | **justin.pillay@kznhealth.gov.za** |
| | Responsible person: | **Justin Pillay** |
| C.1.6 | **PP2-Competitive Selection Procedure** | **Design by Employer** |
| | **PP2B-Open Procedure** | |
| | **Tenderers must meet the minimum qualifying score for functionality criteria first before they can be considered for price and preference.** | |
| C.2.1 | For eligibility refer to **T1.1 Tender Notice and Invitation to Tender** | |
| | This is not an EPWP project | |
| | 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, or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations for a :<br>4EB OR 4EP or higher class of construction work, are eligible to have their tenders evaluated.<br><br>Joint ventures are eligible to submit tenders provided that:<br>1 every member of the joint venture is registered with the CIDB;<br>2 the lead partner has a contractor grading designation in the 4EB OR 4EP or higher, class of construction work; or<br>not lower than one level below the required the required grading designation in the class of works construction works under considerations and possess the required recognition status<br>3 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 :<br>4EB OR 4EP or a value determined in accordance with Regulation 25 (1B) or 25 (7A) of the Construction Industry Development Regulations. | |
| | ***See end of T2.3 AUTHORITY FOR CONSORTIA OR JOINT VENTURES TO SIGN TENDER for combinations of JV's arrangements.*** | |

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|---|---|
| C.2.7 | For particulars regarding a pre-tender site inspection meeting (clarification meeting), see **T1.1 Tender Notice and Invitation to Tender.** |
| C.2.12 | Alternative tender offer permitted: **Yes** ☐ **No** ☒ |
| | If a tenderer wishes to submit an own alternative tender offer, the only criteria permitted for such alternative tender offer is that it demonstrably satisfies the Employer's standards and requirements. A tenderer may submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted. Provided that the tenderer's main tender offer is according to specification and would under normal circumstances be recommended for acceptance, his alternative tender offer may also be considered for the purpose of the award of the contract.<br><br>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.<br><br>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.<br><br>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. |
| C.2.13.2 | Tenderers are to ensure that their company details appear on the entire relevant Tender documentation and must be legible. |
| C.2.13.4 | The second sentence shall read as follows "The Employer will hold all authorised signatories jointly and severally liable on behalf of the tenderer". Tenderders proposing to contract as a Joint Venture shall submit a valid Joint Venture Agreement before the Joint Venture's offer could be accepted. Individuals, Partnerships and Companies proposing to contract as a party to a Joint Venture shall be jointly and severally liable on behalf of the Joint Venture. |
| C.2.13.5 | The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package are as per **T1.1 Tender Notice and Invitation to Tender.** |
| C.2.15 | The closing time for submission of tender offers is as per **T1.1 Tender Notice and Invitation to Tender.** |
| C.2.16 | The tender offer validity period is as per **T1.1 Tender Notice and Invitation to Tender.** |
| | The tenderer is to submit the Priced Bills of Quantities with the Returnable's at the closing of the tender. |
| C.2.19 | Access shall be provided for inspections, tests and analysis as may be required by the Employer. |
| C.2.22 | Tenderers **do not** have to return all retained tender documents within 28 days after expiry of the Tender validity period. |
| | Tenderers are to refer to **List of Returnable Schedules** and **Scope of Works** to establish what is required to be submitted with this tender. |
| C.3.4 | The location for opening of the tender offers, immediately after the closing time thereof shall be at:<br>**KZN Department of Health, 310 Jabu Ndlovu Street, Pietermaritzburg, 3200 at the time indicated on T1.1 Notice and Invitation to Bid** |
| C.3.8 | The employer must determine, on opening and before detailed valuation, whether each Tender offer properly received:<br>a) complies with the requirements of the Conditions of Tender.<br>b) has been properly and fully completed and signed, and<br>c) is responsive to the other requirements of the Tender documents.<br><br>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:<br>a) detrimentally affect the scope, quality, or performance of the Works, services or supply identified in the Scope of Work or<br>b) significantly change the Employers or the Tenderers risks and responsibilities under the contract, or<br>c) affect the competitive position of other Tenderers presenting responsive tenders, if it were to be rectified.<br>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. |

| | |
|---|---|
| C.3.13 | **Tender offers will only be accepted if:**<br>(a) Tenderers must be registered on Government's Central Supplier Database (CSD) and include their master registration number (MAAA number) on the cover page of the tender document in order to enable the institution to verify the tenderers tax status on the CSD<br>(b) the Tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation as is required for this tender and the Tenderder has submitted a CIDB certificate of registration which clearly indicates the status "Active"<br>(c) the Tenderer has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the Tenderder's ability to perform to the contract in the best interests of the employer or potentially compromise the Tender process.<br>(d) the Tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act, 2004 (Act No. 12 of 2004) as a person prohibited from doing business with the public sector; and<br>(e) the Tenderer has not:<br>i) abused the Employer's Supply Chain Management System; or<br>ii) failed to perform on any previous contract and received a written warning/notice or has been terminated on any contract, in the past 5 years with the KZN Department of Health<br>(f) the Tenderer is registered with:<br>i) the Workmen's Compensation Fund<br>(g) the Tenderer submitted Authority to Sign the tender.<br>(h) the Tenderer submitted Financial Standing & other resources of Business Declaration.<br>(i) the Tenderer signed the Form of Offer that is part of the Form of Offer and Acceptance.<br>(j) the Tenderer submitted proof of Preference, if applicable.<br>(k) the Tenderer submitted the fully completed Bill of Quantities including Final Summary at tender closing.<br>(l) the Tenderer submitted a completed Bidder's Disclosure (SBD4).<br>(m) the Tenderer submitted Site Inspection Certificate from the Compulsory Briefing Meeting.<br>(n) the Tenderer submitted deliverables required to assess any stated mandatory criteria.<br>(o) the Tenderer has incorporated all issued addenda (if applicable) into their submitted tender document and/or has complied with any instructions given through issued addenda.<br>Providing the form of offer and acceptance does not contain any qualifying statements, it will constitute the formation of a contract between the employer and the successful Tenderer as described in the form of offer and acceptance. |
| C.3.15 | Tenderders are informed that any formal dispute shall be resolved by being referred to Arbitration only. |

KWAZULU-NATAL PROVINCE
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**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# T1.3 - Annexure C - Standard Conditions of Tender

# T1.3 - Annexure C - Standard Conditions of Tender

Note: Where this document refers to Bid or Bidder it shall be read as tender or tenderer

## C.1 General

### C.1.1 Actions

C.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, and behave equitably, honestly and transparently and comply with all legal obligations and not engage in anticompetitive practices.

C.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. Tenderer's 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 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.

C.1.1.3 The employer shall not seek and the tenderer shall not submit a tender without having a firm intention and the capacity to proceed with the contract.

### C.1.2 Tender Documents

The documents issued by the employer for the purpose of a tender offer are listed in the **tender data**.

**Interpretation**

**C.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.

**C.1.3.2** These conditions of tender, the **tender data** and tender schedules which are required for tender evaluation purposes, shall form part of any contract arising from the invitation to tender.

**C.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 fulfil his or her duties impartially;

ii) an individual or tenderer 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 tenderer who employs that employee.

**comparative offer** means the price after the factors of a non-firm price and all unconditional discounts it can be utilised to have been taken into consideration;

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;

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.

**C.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 read, copied and recorded. Communication 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**.

**C.1.5 Cancellation and Re-Invitation of Tenders**

**C.1.5.1** An employer may, prior to the award of the tender, cancel a tender if-

a) due to changed circumstances, there is no longer a need for the engineering and construction works specified in the inviteation;

b) funds are no longer available to cover the total envisaged expenditure; or

c) no acceptable tenders are received.

d) there is a material irregularity in the tender process.

**C.1.5.2** The decision to cancel a tender invitation must be published in the same manner in which the original tender invitation was advertised.

**C.1.5.3** An Employer may only with the prior approval of the relevant treasury cancel a tender invitation for the second time.

**C.1.6 Procurement procedures**

**C.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.

**C.1.6.2 Competitive negotiation procedure**

**C.1.6.2.1** Where the **tender data** requires 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.

**C.1.6.2.2** All responsive tenderers, or at least a minimum of not less than three responsive tenderers that are highest ranked in terms of the evaluation criteria stated in the **tender data**, shall be invited to enter into competitive negotiations based on the principle of equal treatment, keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of C.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.

**C.1.6.2.3** At the conclusion of each round of negotiations, tenderers shall be invited by the employer to revise their 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.

**C.1.6.2.4** The contract shall be awarded in accordance with the provisions of C.3.11 and C.3.13 after tenderers have been requested to submit their best and final offer.

**C.1.6.3 Proposal procedure using the two stage-system**

**C.1.6.3.1 Option 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.1.6.3.2 Option 2**

**C.1.6.3.2.1** Tenderers shall submit in the first stage only technical proposals. The employer shall invite all responsive tenderes to submit tender offers in the second stage, following the issuing of procurement documents.

**C.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.

## C.2 Tenderer's obligations

### C.2.1 Eligibility

**C.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.

**C.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.

### C.2.2 Cost of tendering

**C.2.2.1** 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.

**C.2.2.2** The cost of the tender documents charged by the employer shall be limited to the actual cost incurred by the employer for printing the documents. Employers must attempt to make available the tender documents on its website so as not to incur any costs pertaining to the printing of the tender documents.

### C.2.3 Check documents

Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.

### C.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.

### C.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.

### C.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.

**C.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 meeting(s) are stated in the **tender data**.

**C.2.8 Seek clarification**

Request clarification of the tender documents, if necessary, by notifying the employer at least five (5) working days before the closing time stated in the **tender data**.

**C.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.

**C.2.10 Pricing the tender offer**

**C.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**.

**C.2.10.2** Show VAT payable by the employer separately as an addition to the tendered total of the prices.

**C.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**.

**C.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.

**C.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.

**C.2.12 Alternative tender offers**

**C.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.

**C.2.12.2** Accept that an alternative tender offer must be based only on the criteria stated in the **tender data** or criteria otherwise acceptable to the employer.

**C.2.12.3** An alternative tender offer must only be considered if the main tender offer is the winning tender.

**C.2.13 Submitting a tender offer**

**C.2.13.1** Submit one tender offer only, either as 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**.

**C.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.

**C.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.

**C.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.

**C.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.

**C.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.

**C.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**.

**C.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.

**C.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**.

**C.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.

**C.2.15 Closing time**

**C.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.

**C.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.

**C.2.16 Tender offer validity**

**C.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**.

**C.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.

**C.2.16.3** Accept that a tender submission that has been submitted to the employer may only be withdrawn or substitutes by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted. If the validity period lapses before the employer evaluating the tender offer(s), the contractor reserves the right to review the price based on Consumer Price Index (CPI)

**C.2.16.4** Where a tender submission is to be substituted, a tenderer must submit a substitute tender in accordance with the requirements of C.2.13 with the packages clearly marked as "SUBSTITUTE".

**C.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 C.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.*

**C.2.18 Provide other material**

**C.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 employers request, the employer may regard the tender offer as non-responsive.

**C.2.18.2** Dispose of samples of materials provided for evaluation by the employer, where required.

**C.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**.

**C.2.20 Submit securities, bonds and policies**

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**.

**C.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.

**C.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**.

**C.2.23 Certificates**

Include in the tender submission or provide the employer with any certificates as stated in the **tender data**.

## C.3 The employer's undertakings

**C.3.1 Respond to request from the tenderer**

**C.3.1.1** Unless otherwise stated in the **tender data**, respond to a request for clarification received up to five (5) working days before the tender closing time stated in the **tender data** and notify all tenderers who collected tender documents.

**C.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.

**C.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 three (3) 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 collected tender documents.

**C.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.

**C.3.4 Opening of tender submissions**

**C.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.

**C.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, number of points claimed for its BBBEE status level and time for completion for the main tender offer only.

**C.3.4.3** Make available the record outlined in C.3.4.2 to all interested persons upon request.

**C.3.5 Two-envelope system**

**C.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 tenderer's' 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.

**C.3.5.2** Evaluate the functionality 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 functionality evaluation more than the minimum number of points for functionality stated in the **tender data**, and announce the score obtained for the technical proposals and the total price and any points claimed on BBBEE status level. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for functionality.

**C.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.

**C.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.

**C.3.8 Test for responsiveness**

**C.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.

**C.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.

**C.3.9 Arithmetical errors, omissions and discrepancies**

**C.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.

**C.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 items 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.

**C.3.9.3** Notify the tenderer of all errors or omissions that are identified in the tender offer and either confirm the tender offer as tendered of accept the corrected total of prices

**C.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.

**C.3.10 Clarification of a tender offer**

Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.

**C.3.11 Evaluation of tender offers**

The Standard Conditions of Tender standardize the procurement processes, methods and procedures from the time that tenders are invited to the time that a contract is awarded. They are generic in nature and are made project specific through choices that are made in developing the Tender Data associated with a specific project.

Conditions of tender are by definition the document that establishes a tenderer's obligations in submitting a tender and the employer's undertakings in soliciting and evaluating tender offers. Such conditions establish the rules from the time a tender is advertised to the time that a contract is awarded and require employers to conduct the process of offer and acceptance in terms of a set of standard procedures

| **The CIDB Standard Conditions of Tender are based on a procurement system that satisfies the following system requirements:** | |
|---|---|
| **Requirement** | **Qualitative interpretation of goal** |
| Fair | The process of offer and acceptance is conducted impartially without bias, providing simultaneous and timely access to participating parties to the same information. |
| Equitable | Terms and conditions for performing the work do not unfairly prejudice the interests of the parties. |
| Transparent | The only grounds for not awarding a contract to a tenderer who satisfies all requirements are restrictions from doing business with the employer, lack of capability or capacity, legal impediments and conflicts of interest. |
| Competitive | The system provides for appropriate levels of competition to ensure cost effective and best value outcomes. |
| Cost effective | The processes, procedures and methods are standardized with sufficient flexibility to attain best value outcomes in respect of quality, timing and price, and least resources to effectively manage and control procurement processes. |

**The activities associated with evaluating tender offers are as follows:**

a) Open and record tender offers received
b) Determine whether or not tender offers are complete
c) Determine whether or not tender offers are responsive
d) Evaluate tender offers
e) Determine if there are any grounds for disqualification
f) Determine acceptability of preferred tenderer
g) Prepare a tender evaluation report
h) Confirm the recommendation contained in the tender evaluation report

**C.3.11.1 General**

The employer must appoint an evaluation panel of not less than three persons conversant with the proposed scope of works to evaluate each responsive tender offer using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

**C.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.

**C.3.13 Acceptance of tender offer**

Accept tender offer, if in the opinion of the employer, it does not present any 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, under Business Rescue as provided for in chapter 6 of the Companies Act No. 2008, bankrupt or being wound up, has his/her affairs administered by a court or a judicial officer, has suspended his/her 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.

**C.3.14 Prepare contract documents**

**C.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, and

c) other revisions agreed between the employer and the successful tenderer.

**C.3.14.2** Complete the schedule of deviations attached to the form of offer and acceptance, if any.

**C.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.

**C.3.16 Registration of the Award**

An Employer must, within twenty-one (21) working days from the date on which a contractor's offer to perform a construction works contract is accepted in writing by the employer, register and publish the award on the cidb Register of Projects.

**C.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.

**C.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.

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# PART T2 - RETURNABLE DOCUMENTS

# T2.1 LIST OF RETURNABLE DOCUMENTS

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Project Manager:** | **Justin Pillay** | **Tender no:** | **ZNB 5245/2023-H** |

**STAGE 1 VERIFICATION: MINIMUM MANDATORY / COMPULSORY REQUIREMENTS FOR TENDER EVALUATION PURPOSES**

*(Tenderer to Insert a tick ( √ ) in the "Returnable document" column to check which documents he/she returned with the tender)*

| Document name | Returnable document | |
|---|---|---|
| Invitation to Tender - SBD 1 (T2.37) | **Yes** | |
| Bidder's Disclosure - SBD 4 (T2.11) | **Yes** | |
| Authority to Sign Tender (T2.2) | **Yes** | |
| Authority for Consortia or Joint Venture's to Sign Tender (T2.3) | **Yes** | |
| Special Resolution of Consortia or Joint Venture's (If applicable) (T2.4) | **Yes** | |
| Joint Venture Involvement Declaration (If applicable) (T2.5) | **Yes** | |
| Financial Standing and other resources of Business Declaration (T2.8) | **Yes** | |
| Site Inspection Certificate as proof for attendance of compulsory briefing meeting (T2.10) | **Yes** | |
| Record of Addenda to Tender Documents (T2.12) | **Yes** | |
| Schedule of Imported Materials and Equipment (T2.14) | **Yes** | |
| Latest Audited Annual Financial Statement (T2.15a) | **No** | N/A |
| Contractor's Safety, Health and Environmental Declaration. (T2.17) | **Yes** | |
| Compulsory Enterprise Questionnaire (T2.18) | **Yes** | |
| Tax Compliance Status (TCS) PIN to verify on line Compliance Supplier Status via e-Filing (T2.19) | **Yes** | |
| Proof of Good Standing with the Compensation Commissioner (Attach) (T2.20) | **Yes** | |
| Form of Offer and Acceptance (Bound into Section 1 of 2) (T2.21) | **Yes** | |
| Proof of UIF Registration - Not Applicable (T2.24) | **No** | N/A |
| The National Industrial Participation Programme (T2.25) | **Yes** | |
| Proof of Registration Number on the Central Suppliers Database (T2.27) | **Yes** | |
| Complete Priced Bill of Quantities | **Yes** | |

**DOCUMENTS REQUIRED FOR THE EVALUATION OF MANDATORY TECHNICAL CRITERIA (IF APPLICABLE) - T2.29**

*(Tenderer to Insert a tick (√ ) in the "Returnable document" column to check which documents he/she returned with the Tender)*

| Tender document requirement | Returnable | |
|---|---|---|
| Annexure 10 - Project Specifications -St. Mary's Hospital – Nurses Residence Generator Replacement" Schedule of Equipment Part FOUR | **Yes** | |
| | | |
| | | |
| | | |

**Note:** >The documents, as stated in the above table if applicable, must be submitted with the tender by the closing date and time as determined by the KZN Department of Health. Should these documents not be submitted by the tenderer as required, then the tender will be declared as non-responsive and will be disqualified. Should the tenderer submit the required documentation but the evaluation committee requires further clarity/information to conduct their assessment, then the tenderer may be contacted to provide this additional information failing which the tenderer shall be eliminated from the evaluation process.

## STAGE 2 DOCUMENTS REQUIRED FOR THE EVALUATION OF FUNCTIONALITY - T2.36

*(Tenderer to Insert a tick (√ ) in the "Returnable document" column to check which documents he/she returned with the Tender)*

| Tender document requirement | Returnable | |
|---|---|---|
| The following documents to reflect the information captured in the schedule of projects:<br>- Attach Letter of Award/Order<br>- Attach Completion Certificates - signed by the Institution Client/Engineer /Principal Agent indicating successful completion for each project | **Yes** | |
| Tenderer to include the following information to reflect the information provided in the organogram:<br>- All names and surnames provided, all roles & capacity clearly outlined and CVs for all of them | **Yes** | |
| Schedule of Equipment: Part FOUR Annexure 10 in attached as for the 250kVA generator fully completed.<br>NB: Only equipment/brands with proven history will be accepted and if not furnished, will lead to automatic disqualification. | **Yes** | |

## STAGE 3 EVALUATION OF PRICE AND PREFERENCE - T2.9

**The Department has identifed the following specific goal:**

- full points(20 points) to companies who are at least 51% Owned by Black People

Ownership verification will be conducted through Central Suppliers Database by National Treasury, through the B-BBEE scorecard attributes or Companies and Intellectual Property Commission (CIPC), using Municipal Local Economic Development Database, Confirmation Letters from Municipality and councillors

*(Tenderer to Insert a tick (√ ) in the "Returnable document" column to check which documents he/she returned with the tender)*

| Document name | Returnable document | |
|---|---|---|
| Proof of ownership in the form of printouts from CSD or CIPC clearly indicating ownership details | **Yes** | |

# T2.2 AUTHORITY TO SIGN TENDER

**RESOLUTION** of a meeting of the Board of *Directors / Members / Partners of:

_____

_____

*(Legally correct full name and registration number, if applicable, of the Enterprise)*

held at *(town)*: _____ on *(date)*: _____

**RESOLVED that:**

1. The Enterprise submits a Tender to the KZN Department of Health in respect of the following project:

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

Tender Number: **ZNB 5245/2023-H**

2.
*Mr./Mrs./Ms: _____

in *his/her capacity as: _____ *(Position in the Enterprise)*

and who will sign as follows: _____ (Authorised Signatory)

be, and is hereby, authorised to sign the Tender, and any and all other documents and/or correspondence in connection with and relating to this Tender, as well as to sign any Contract, and any and all documentation, resulting from the award of the Tender to the Enterprise mentioned above.

| | Name | Capacity | Signature |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |

*Note:*

*1. * Delete which is not applicable.*

*2. NB. This resolution / Power of Attorney must be signed by all the Directors / Members / Partners of the Legal Tendering Enterprise authorising the Representative to make this Offer.*

*3. Should the number of Directors / Members/Partners exceed the space available above, additional names and signatures must be supplied on a separate page.*

*4. In the case of the tendering Enterprise being a Close Corporation, a **copy of the Founding Statement** of such corpora - tion must be attached to this tender.*

**ENTERPRISE STAMP** (If Any)

# T2.3 AUTHORITY FOR CONSORTIA OR JOINT VENTURES TO SIGN TENDER

**RESOLUTION** of a meeting of the Board of *Directors / Members / Partners of:

_____

_____

(*Legally correct full name and registration number, if applicable, of the Enterprise)*

held at *(town)*: _____ on *(date)*: _____

**RESOLVED that:**

1. The Enterprise submits a Tender, in consortium/Joint Venture with the following Enterprises:

   _____

   _____

   *(List all the legally correct full names and registration numbers, if applicable, of the Enterprises forming the Consortium/Joint Venture)*

   to the KZN Department of Health in respect of the following project:

   **St. Mary's Hospital – Nurse's Residence Generator Replacement**

   Tender Number: **ZNB 5245/2023-H**

2. * Mr. / Mrs. / Ms.: _____ in

   *his/her Capacity as: _____ *(Position in the Enterprise)*

   and who will sign as follows: _____
   be, and is hereby, authorised to sign a consortium/joint venture agreement with the parties listed under item 1 above, and any and all other documents and/or correspondence in connection with and relating to the consortium/joint venture, in respect of the project described under item 1 above.

3. The Enterprise accepts joint and several liability with the parties listed under item 1 above for the due fulfilment of the obligations of the joint venture deriving from, and in any way connected with, the Contract to be entered into with the Department in respect of the project described under item 1 above.
4. The Enterprise chooses as its *domicilium citandi et executandi* for all purposes arising from this joint venture agreement and the Contract with the Department in respect of the project under item 1 above:

   Physical address: _____

   _____

   _____

   _____ (Postal Code)

   Postal Address: _____

   _____

   _____

   _____ (Postal Code)

Telephone number: *(Dialling Code followed by number)* _____

Fax number: *(Dialling Code followed by number)* _____

Email Address : _____

***BOARD OF DIRECTORS / MEMBERS / PARTNERS in Consortium of Joint Venture**

| | Name | Capacity | Signature |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |

***Note:***

*1. * Delete which is not applicable.*

*2. NB. This resolution / Power of Attorney must be signed by all the Directors / Members / Partners of the Tendering Enterprise.*

*3. Should the number of Directors / Members/Partners exceed the space available above, additional names and signatures must be supplied on a separate page.*

**ENTERPRISE STAMP** (If Any)

| Deemed to satisfy joint venture arrangements | Designation |
|---|---|
| Grading 2 + Grading 2 + Grading 2 | = 3 |
| Grading 3 + Grading 3 + Grading 3 | = 4 |
| Grading 4 + Grading 4 | = 5 |
| Grading 4 + Grading 3 + Grading 3 | = 5 |
| Grading 5 + Grading 5 | = 6 |
| Grading 5 + Grading 4 + Grading 4 | = 6 |
| Grading 6 + Grading 6 | = 7 |
| Grading 6 + Grading 5 + Grading 5 | = 7 |
| Grading 7 + Grading 7 + Grading 7 | = 8 |
| Grading 8 + Grading 8 + Grading 8 | = 9 |

Tenderers who envisage entering into a Joint Venture shall complete a submit a Joint Venture Agreement (see copy of CIDB's agreement elsewhere in this document) with this Tender.

# T2.4 SPECIAL RESOLUTION OF CONSORTIA OR JOINT VENTURES

**RESOLUTION** of a meeting of the duly authorised representatives of the following legal entities who have entered into a consortium/joint venture to jointly tender for the project mentioned below: (*legally correct full names and registration numbers, of the Enterprises forming a Consortium/Joint Venture)*

_____

_____

2. _____

_____

3. _____

_____

4. _____

_____

5. _____

_____

6. _____

_____

7. _____

_____

8. _____

_____

held at: _____ *(place)* on _____ *(date)*

## RESOLVED that:

A. The above-mentioned Enterprises submits a Tender in Consortium/Joint Venture to the KZN Department of Health in respect of the following project:

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

---

Tender Number: **ZNB 5245/2023-H**

Project Code: **222728**

B. Mr/Mrs/Ms: _____ in

*his/her Capacity as: _____ *(Position in the Enterprise)*

and who will sign as follows: _____
be, and is hereby, authorised to sign the Tender, and any and all other documents and/or correspondence in connection with and relating to the Tender, as well as to sign any Contract, and any and all documentation, resulting from the award of the Tender to the Enterprises in Consortium/Joint Venture mentioned above.

C. The Enterprises constituting the Consortium/Joint Venture, notwithstanding its composition, shall conduct all business under the name and style of:

_____

D. The Enterprises to the Consortium/Joint Venture accept joint and several liability for the due fulfilment of the obligations of the Consortium/Joint Venture deriving from, and in any way connected with, the Contract entered into with the Department in respect of the project described under item A above.

E. Any of the Enterprises to the Consortium/Joint Venture intending to terminate the consortium/joint venture agreement, for whatever reason, shall give the Department 30 days written notice of such intention. Notwithstanding such decision to terminate, the Enterprises shall remain jointly and severally liable to the Department for the due fulfilment of the obligations of the Consortium/Joint Venture as mentioned under item D above.

F. No Enterprise to the Consortium/Joint venture shall, without the prior written consent of the other Enterprises to the Consortium/Joint Venture and of the Department, cede any of its rights or assign any of its obligations under the consortium/joint Venture and of the Department, cede any of its rights or assign any of its obligations under the consortium/joint venture agreement in relation to the Contract with the Department referred to herein.

G. The Enterprises choose as the *domicilium citandi et executandi* of the consortium/joint venture for all purposes arising from the consortium/joint venture agreement and the Contract with the Department in respect of the project under item A above:

Physical address: _____

_____

_____

_____ (Postal Code)

Postal Address: _____

_____

_____

_____ (Postal Code)

Telephone number: *(Dialling Code followed by number)* _____

Fax number: *(Dialling Code followed by number)* _____

Email Address : _____

***BOARD OF DIRECTORS / MEMBERS / PARTNERS in Consortium of Joint Venture**

| | Name | Capacity | Signature |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |

***Note:***

1. ** Delete which is not applicable.*

2. ***NB.*** *This resolution / Power of Attorney must be signed by all the Duly Authorised Representatives of the Legal Entities to the Consortium/Joint Venture submitting this Tender.*
3. *Should the number of Duly Authorised Representatives of the Legal Entities joining forces in this Tender exceed the space available above, additional names and signatures must be supplied on a separate page.*
4. *Resolutions, duly completed and signed, from the separate Enterprises who participate in this Consortium/Joint Venture must be attached to the Special Resolution.*

# T2.5 JOINT VENTURES INVOLVEMENT DECLARATION

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

**DECLARATION RELATING TO A TENDER SUBMITTED BY A JOINT VENTURE :**

I/We the undersigned parties do hereby declare that our respective involvement in the Works, of which I/we tender by Joint Venture, would be as follows :-

| **Party No. 1** | |
|---|---|
| **CENTRAL SUPPLIERS DATABASE REGISTRATION NO:** | |
| **TENDERERS CIDB REGISTRATION NUMBER:** | |
| Name | |
| Address | |
| Percentage involvement | % |

| **Party No. 2** | |
|---|---|
| **CENTRAL SUPPLIERS DATABASE REGISTRATION NO:** | |
| **TENDERERS CIDB REGISTRATION NUMBER:** | |
| Name | |
| Address | |
| Percentage involvement | % |

| **Party No. 3** | |
|---|---|
| **CENTRAL SUPPLIERS DATABASE REGISTRATION NO:** | |
| **TENDERERS CIDB REGISTRATION NUMBER:** | |
| Name | |
| Address | |
| Percentage involvement | % |

**Signed - Party No. 1**

I/We *(Full Name)* _____

duly authorised in my capacity as _____

of *(Enterprise name)* : _____

do jointly and severally accept responsibility for the due performance of the Works contained in the above project should such Tender submitted by the Joint Venture be accepted.

_____ _____

do jointly and severally accept responsibility for the due performance of the Works contained in the above project should such tender submitted by the Joint Venture be accepted.

_____ _____

Signed by Authorised Representative Date

**Signed - Party No. 3**

I/We *(Full Name)* _____

duly authorised in my capacity as _____

of *(Enterprise name)* : _____

do jointly and severally accept responsibility for the due performance of the Works contained in the above project should such tender submitted by the Joint Venture be accepted.

_____ _____

Signed by Authorised Representative Date

# T2.8 FINANCIAL STANDING AND OTHER RESOURCES OF BUSINESS DECLARATION

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

(a) Based on the track record determined on the Minimum Average Annual Turnover coupled to the assessed Works Capabilities of Contracting Enterprises, the Construction Industry Development Board (CIDB) awards Grading Designations and accordingly registers it on the system.

This confirms that a Contractor has, at the time of registration, in the absence of any supply side interventions, sufficient working capital to commence the Works for a single contract and render due performance.

(b) However, it regularly occurs that a Contractor will at the same time submit tenders for a number of projects that are advertised during an overlapping period. Moreover, the Contractor may be busy with a Contract that is of the registered CIDB Grading Designation (value) or is even attending to a number of smaller valued Contracts.

(c) It therefore becomes the prerogative of a Tenderer in such instances to prove to the Department that the Enterprise has the capacity in every respect to attend to more than one (1) contract at a time.

(d) A Tenderer who wishes to be considered for this tender Contract award, over and above other tenders that they have submitted, shall submit if/when requested by the DoH the necessary proof that:

(i) he/she has access to additional finance (inclusive of a PERFORMANCE GUARANTEE BY A REGISTERED FINANCIAL INSTITUTION),
(ii) he/she has additional Human Resources available to successfully complete this project.
(iii) he/she has adequate Equipment, Plant and Machinery that all of the above can, undoubtedly, be sourced for this tender. (Please submit to the DoH the name and contact details of the supplier if the Tenderer is going to hire Equipment, Plant or Machinery, when requested.)

I, the undersigned, _____

*(name of person authorized to sign on behalf of the Tenderer*

understand that it is the responsibility of the Tenderer to prove and provide if/when requested by the DoH, evidence of the good Financial Standing of the Business to complete the Contract successfully.

Furthermore, it is understood that failure to provide if/when requested by DoH, at least the information as stated in paragraphs (d)(i)(ii) AND (iii) above will not enable the Evaluation Team to assess the CURRENT financial standing of the Business and the failure to provide said information when requested will, therefore, invalidate the Tender.

I accept and understand that the KZN Department of Health, as representative of the Provincial Administration of KwaZulu-Natal in this tender, may act against me and the Tenderer, jointly and severally, should this declaration and/or any information provided be found to be false.

Duly signed at……. on this the….. day of……. 20…..

| | |
|---|---|
| Full Name of Signatory | Name of Enterprise |
| Capacity of Signatory | Signature of authorised representative |

| T2.9 PREFERENCE POINTS CLAIM - SBD 6.1 | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

**PREFERENCE POINTS CLAIM FORM 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.

**BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022.**

## 1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all Tenders:

- the 80/20 system for requirements with a Rand value of up to R 50 000 000 (all applicable taxes included); and

- the 90/10 system for requirements with a Rand value above R 50 000 000 (all applicable taxes included).

1.2 The applicable preference point system for this tender is the 80/20 preference point system.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

| | | |
|---|---|---|
| (a) | Price points and | 80 |
| (b) | Specific Goals | 20 |

1.4 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**

$$Ps = 80\left(1 - \frac{Pt - P\min}{P\min}\right)$$

or

**90/10**

$$Ps = 90\left(1 - \frac{Pt - P\min}{P\min}\right)$$

Where:

$P_s$ = Points scored for cooperative price of Tender under consideration
$P_t$ = Comparative price of Tender under consideration
$P_{min}$ = Comparative 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**

$$Ps = 80\left(1 - \frac{Pt - P\min}{P\min}\right)$$

or

**90/10**

$$Ps = 90\left(1 - \frac{Pt - P\min}{P\min}\right)$$

Where:

$P_s$ = Points scored for cooperative price of Tender under consideration
$P_t$ = Comparative price of Tender under consideration
$P_{min}$ = Comparative price of lowest 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) 3any 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 organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.**

**Note to tenderers: The tenderer must indicate how they claim points for each preference point system.)**

| 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) |
|---|---|---|
| Companies who are at least 51% Owned by Black People | 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:

i) The information furnished is true and correct;

ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;

iii) 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;

iv) 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:** .....

.....

.....

.....

| T2.10 SITE INSPECTION MEETING CERTIFICATE | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |
| **Site Inspection Date:** | | **18 October 2023** | |

This is to certify that I, _____
*(Name of authorised Representative)*

representing _____
*(Name of Enterprise)*

visited the site on: _____ *(Date)*

I have made myself familiar with all local conditions likely to influence the work and the cost thereof. I further certify that I am satisfied with the description of the work and explanations given at the site inspection meeting and that I understand the work to be done, as specified and implied, in the execution of this contract.

I declare that my representative is technically capable and knowledgeable to represent my company in the meeting. I further confirm that my representative's attendance at this site meeting, shall be deemed conclusive proof that my Enterprise is fully aware of what was said and discussed at this meeting.

| | | |
|---|---|---|
| Name of Tenderer | Signature | Date |

| | | |
|---|---|---|
| J. Pillay | | 18 October 2023 |
| Name of DOH Representative | Signature | Date |

**This form is only to be completed when applicable to the tender and if a Compulsory Briefing meeting has been called.**

Departmental Stamp:

| T2.11 BIDDER'S DISCLOSURE - SBD 4 | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

**1. PURPOSE OF THE FORM**

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

**2. Bidder's declaration**

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having controlling interest[1] in the enterprise, employed by the state? **YES / NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

| Full Name | Identity Number | Name of State institution |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution?

**YES / NO**

2.2.1 If so, furnish particulars:

_____

_____

[1] the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

2.3. Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? **YES / NO**

2.3.1 If so, furnish particulars:

_____

_____

**3. DECLARATION**

I, the undersigned, (name)……. in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

3.1 I have read and I understand the contents of this disclosure;
3.2I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
3.3 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[2] will not be construed as collusive bidding.
3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
3.4The 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.

[2] 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.

3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

3.6I 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.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.
I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

**Signature** **Date**

**Position** **Name of Bidder**

# T2.12 RECORD OF ADDENDA TO TENDER DOCUMENTS

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

The undersigned 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 | No. of Pages |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |

Attach Additional Pages if more space is required

**If it is found that the Tenderer has failed to incorporate any addendum into their tender document, the tender will be deemed non-responsive**

| | | | |
|---|---|---|---|
| **Signed** | | **Date** | |
| **Name** | | **Position** | |
| **Tenderer** | | | |

# T2.14 SCHEDULE FOR IMPORTED MATERIALS AND EQUIPMENT

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

This schedule should be completed by the tenderer. *(Attach additional page(s) if more space is required)*

| Item | Material / Equipment | Quotation (Excluding VAT) |
|---|---|---|
| 1 | | R |
| 2 | | R |
| 3 | | R |
| 4 | | R |
| 5 | | R |
| 6 | | R |

**The Contractor shall list imported items, materials and/or equipment which shall be excluded from the Contract Price Adjustment Provisions (if applicable) and shall be adjusted in terms of currency fluctuations only. Copies of the supplier's quotations for the items, materials or equipment (provided that such costs shall not be higher than the relevant contract rate as listed above) should be lodged with the Principal Agent / Engineer of the Department of Health within 60 (sixty) days from the date of acceptance of the tender. No adjustment of the local VAT amount, nor the contractor's profit, discount, mark-up, handling costs, etc. shall be allowed. (See P&G E16)**

These net amounts will be adjusted as follows:

**FORMULA:**

The net amount to be added to or deducted from the contract sum:

$$A = V\left(\frac{Z}{Y} - 1\right)$$

A = the amount (R) of adjustment

V = the net amount (supplier's quotation) (R) of the imported item

Y = exchange rate 14 days prior to closing date of tender submission

Z = exchange rate on the date of the Bill of Lading* of exporters invoice.

** A bill of lading (sometimes abbreviated as B/L or BoL) is a document issued by a carrier which details a shipment of merchandise and gives title of that shipment to a specified party. Bills of lading are one of three important documents used in international trade to help guarantee that exporters receive payment and importers receive merchandise. A straight bill of lading, which is referred to above, is used when payment has been made in advance of shipment and requires a carrier to deliver the merchandise to the appropriate party. It is therefore the date of the paid up invoice when the shipment leaves the exporter's location. [http://en.wikipedia.org/wiki/Bill_of_lading]*

| | | |
|---|---|---|
| | | |
| Name of authorised representative | Signature | Date |

# T2.17 CONTRACTOR'S SAFETY, HEALTH AND ENVIRONMENTAL DECLARATION

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

In terms of Regulation 5(1)(h) of the Construction Regulations of February 2014 a Contractor may only be appointed to perform construction work if the Client is satisfied that the Contractor has the necessary competencies and resources to carry out the work safely in accordance with the Occupational Health and Safety Act, Act 85 of 1993 and the Construction Regulations of February 2014. In line with this requirement the Contractor is required to read through this document carefully, sign it and submit it with his/her Tender.

**DECLARATION**

1. I, the undersigned hereby declare and confirm that I am fully conversant with the Occupational Health and Safety Act, Act 85 of 1993 and the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specifications attached to this document.
2. I hereby declare that my company and its employees has the necessary competency and resources to safely carry out the construction works under this contract in compliance with the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specifications.
3. I hereby confirm that adequate provisions has been made in my Tender to cover the cost of all Safety, Health and Environmental duties and responsibilities imposed on me by the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specifications.
4. I hereby undertake that if my Tender is accepted, to provide before commencement of the Works under the contract or as required by the Conditions of the Contract, a suitable and sufficiently documented Construction Safety, Health and Environmental Management Plan in accordance with Regulation 7(1)(a) of the Construction Regulations of February 2014, which shall be subject for approval by the Client.
5. I confirm that I may not commence with any part of construction work under the contract until my Construction Safety Health and Environmental Management Plan has been approved in writing by the Client.
6. I hereby confirm that copies of the following documentation will be kept on site for viewing and inspection purposes for the duration of the construction work:
   a) Client's Construction Safety, Health and Environmental Specification.
   b) Approved Construction Safety, Health and Environmental Plan.
   c) Occupational Health and Safety Act, Act 85 of 1993.
   d) Construction Regulations of February 2014.
7. I agree that my failure to complete and execute this declaration to the satisfaction of the Client will mean that I am unable to comply with the requirements of the Occupational Health and Safety Act, Act 85 of 1993 and the Construction Regulations of February 2014, and accept that my Tender will be rejected.

Duly signed at……. on this the….. day of……. 20…..

| | |
|---|---|
| Full Name of Signatory | Name of Enterprise |
| Capacity of Signatory | Signature of authorised representative of Tenderer |

# T2.18 Compulsory Enterprise Questionnaire

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

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: CSD Number:** | |

**Section 5: 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 6 partners*

**Section 6: Particulars of companies and close corporations**

| | |
|---|---|
| Company registration number | |
| Close corporation number | |
| Tax reference number | |

| |
|---|
| **Section 7: SBD4 issued by National Treasury must be completed for each tender and be attached as a tender requirement** |
| **Section 8: SBD6 issued by National Treasury must be completed for each tender and be attached as a tender requirement** |
| **Section 9: -** |
| **Section 10: -** |

The undersigned, who warrants that he/she is duly authorised to do so on behalf of the enterprise:

i) authorizes the Employer to verify the tenderers tax clearance status from the South African Revenue Services that it is in order;

ii) confirms that 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; and

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** | | | |

# T2.19 TAX COMPLIANCE STATUS (TCS) PIN TO VERIFY ON LINE COMPLIANCE SUPPLIER STATUS VIA SARS e-FILING

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

## TAX CLEARANCE REQUIREMENTS

It is a condition of Tender that the taxes of the successful tenderer must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the tenderer's tax obligations. It is a condition of this Offer of Commission that your practice remains in good standing with SARS (South African Revenue Services) in terms of its tax clearance.

1. In order to meet this requirement Tenderders are required to apply via e-filing at any SARS branch office nationally. The Tax Complance Status (TCS) requirements are also applicable to foreign Tenderders / individuals who wish to submit tenders.
2. SARS will then furnish the tenderer with a Tax Compliance Status (TCS) **PIN** that will be valid for a period of 1 (one) year from the date of approval.
3. In tenders where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Compliance Status (TCS) PIN.
4. Application for Tax Compliance Status (TCS) PIN can be done via e-filing at any SARS branch office nationally or on the website www.sars.gov.za.
5. Tax Clearance Certificates may be printed via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

## IMPORTANT NOTICE

1. The South African Revinue Services (SARS) has phased out the issuing of paper Tax Clearance Certificates.
2. From 18 April 2016 SARS introduced an enhanced Tax Compliance (TCS) system.
3. The new system allows taxpayers to obtain a Tax Compliance Status (PIN), which can be utilised by authorised third parties to varify taxpayers compliance status online via SARS e-filing.
4. Tenderers are required to fill in clearly, legibly, in bold print and black ink the SARS (TCS) PIN number and Tax Reference number in the space hereunder:

| | |
|---|---|
| **Tax Compliance Status(TCS) PIN Number** | |
| **Company / Tendering Entity Tax Reference Number** | |

**Name of Tenderer: .....**

**Signature of tenderer: .....**

**Date: .....**

# T2.20 PROOF OF GOOD STANDING WITH THE COMPENSATION COMMISSIONER

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

ATTACH A COPY OF PROOF, THAT THE TENDERER IS IN GOOD STANDING WITH THE COMPENSATION COMMISSIONER, TO THIS PAGE FOR ADJUDICATION PURPOSES

**NOTE**

In the case of a Tender by a Joint Venture, copies of proof of Good Standing with the Compensation Commissioner in respect of each party to the Joint Venture must be attached to this page

# T2.21 - FORM OF OFFER AND ACCEPTANCE

**Tender no: ZNB 5245/2023-H**

## OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of :

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

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:**

| | |
|---|---|
| **Amount (in words):** | |
| **Amount in figures:** | **R** |

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 (s)** | | | | |
| **Name (s)** | | | | |
| **Capacity** | | | | |
| **For the tenderer** | | | | |
| | (Name and address of tenderer) | | | |
| **Name and signature of witness** | | | **Date** | |

# 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 | Agreement 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 the above listed Parts. |

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the returnable 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 form of offer and acceptance. 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 securities, 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 fulfil 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 (5) working days of the date of such receipt notifies the employer in writing of any reason why he/she cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

| | | | |
|---|---|---|---|
| **Signature (s)** | | | |
| **Name (s)** | | | |
| **Capacity** | | | |
| **For the employer** | | | |
| | *(Name and address of employer)* | | |
| **Name and signature of witness** | | | |

## Schedule of Deviations

Notes:
1. The extent of deviations from the tender documents issued by the employer before 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
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.

| |
|---|
| **1.1.1. Subject:** |
| **Details:** |

| |
|---|
| **1.1.2. Subject:** |
| **Details:** |

| |
|---|
| **1.1.3. Subject:** |
| **Details:** |

| |
|---|
| **1.1.4. 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 returnable 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.

# T2.22 - FINAL BILL OF QUANTITY SUMMARY

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

ATTACH SUMMARY PAGE OF THE BILL OF QUANTITIES

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

**PRICE PAGE**

**N.B.: This form must be completed in detail signed by the Bidder and bears the signature of a witness.**

**Failure to comply with these requirements may result in the bid being disregarded.**

**CLOSING DATE AND TIME: _____ at 11:00.** **VALIDITY PERIOD: 12 WEEKS**

| **BID/CONTRACT NO: ZNB _____ PERIOD: _____** | |
|---|---|
| **St. Mary's Hospital – Nurse's Residence Generator Replacement** | NAME AND ADDRESS OF BIDDER(FIRM)<br>……<br>……<br>……<br>TEL: ……..<br>FAX: ……. |
| DOES OFFER COMPLY WITH THE SPECIFICATION?<br>*If not, furnish details of deviation in space provided for "Remarks"* | YES/NO<br>*(Delete which is not applicable)* |
| CONTRACT EXECUTION PERIOD | ……weeks/months |
| CARRIED OVER FROM SCHEDULE OF PRICES PS 1 | |
| PS 2 | |
| PS 3 | |
| | |
| | |
| **Subtotal :** PS 1 to PS 3 | R …….. |
| **VALUE ADDED TAX @ 15%** (Rate applicable on date of submission of Bidder) | R …….. |
| **TOTAL BID PRICE** | R …….. |
| **REMARKS (If any):** | ……<br>(Signature of Bidder)<br>DATE: ……<br>……<br>(Signature of Witness)<br>DATE: …… |

# T2.25 THE NATIONAL INDUSTRIAL PARTICIPATION PROGRAMME

**INTRODUCTION**

The National Industrial Participation (NIP) Programme, which is applicable to all government procurement contracts that have an imported content, became effective on the 1 September 1996. The NIP policy and guidelines were fully endorsed by Cabinet on 30 April 1997. In terms of the Cabinet decision, all state and parastatal purchases / lease contracts (for goods, works and services) entered into after this date, are subject to the NIP requirements. NIP is obligatory and therefore must be complied with. The Industrial Participation Secretariat (IPS) of the Department of Trade and Industry (DTI) is charged with the responsibility of administering the programme.

**1 PILLARS OF THE PROGRAMME**

1.1 The NIP obligation is benchmarked on the imported content of the contract. Any contract having an imported content equal to or exceeding US$ 10 million or other currency equivalent to US$ 10 million will have a NIP obligation. This threshold of US$ 10 million can be reached as follows:

(a) Any single contract with imported content exceeding US$10 million.

or

(b) Multiple contracts for the same goods, works or services each with imported content exceeding US$3 million awarded to one seller over a 2 year period which in total exceeds US$10 million.

or

(c) A contract with a renewable option clause, where should the option be exercised the total value of the imported content will exceed US$10 million.

or

(d) Multiple suppliers of the same goods, works or services under the same contract, where the value of the imported content of each allocation is equal to or exceeds US$ 3 million worth of goods, works or services to the same government institution, which in total over a two (2) year period exceeds US$10 million.

1.2 The NIP obligation applicable to suppliers in respect of sub-paragraphs 1.1 (a) to 1.1 (c) above will amount to 30 % of the imported content whilst suppliers in respect of paragraph 1.1 (d) shall incur 30% of the total NIP obligation on a pro-rata basis.

1.3 To satisfy the NIP obligation, the DTI would negotiate and conclude agreements such as investments, joint ventures, sub-contracting, licensee production, export promotion, sourcing arrangements and research and development (R&D) with partners or suppliers.

1.4 A period of seven years has been identified as the time frame within which to discharge the obligation.

**2 REQUIREMENTS OF THE DEPARTMENT OF TRADE AND INDUSTRY**

2.1 In order to ensure effective implementation of the programme, successful tenderers (contractors) are required to, immediately after the award of a contract that is in excess of R10 million (ten million Rands), submit details of such a contract to the DTI for reporting purposes.

2.2 The purpose for reporting details of contracts in excess of the amount of R10 million (ten million Rands) is to cater for multiple contracts for the same goods, works or services; renewable contracts and multiple suppliers for the same goods, works or services under the same contract as provided for in paragraphs 1.1.(b) to 1.1. (d) above.

**3 Tender SUBMISSION AND CONTRACT REPORTING REQUIREMENTS OF TenderDERS AND SUCCESSFUL TenderDERS (CONTRACTORS)**

3.1 Tenderders are required to sign and submit this Standard Tenderding Document (SBD 5) together with the Tender on the closing date and time.

3.2 In order to accommodate multiple contracts for the same goods, works or services; renewable contracts and multiple suppliers for the same goods, works or services under the same contract as indicated in sub-paragraphs 1.1 (b) to 1.1 (d) above and to enable the DTI in determining the NIP obligation, successful Tenderders (contractors) are required, immediately after being officially notified about any successful Tender with a value in excess of R10 million (ten million Rands), to contact and furnish the DTI with the following information:

- Tender / contract number.
- Description of the goods, works or services.
- Date on which the contract was accepted.
- Name, address and contact details of the government institution.
- Value of the contract.
- Imported content of the contract, if possible.

3.3 The information required in paragraph 3.2 above must be sent to the Department of Trade and Industry, Private Bag X 84, Pretoria, 0001 for the attention of Mr. Elias Malapane within five (5) working days after award of the contract. Mr. Malapane may be contacted on telephone (012) 394 1401, facsimile (012) 394 2401 or e-mail at Elias@thedti.gov.za for further details about the programme.

**4 PROCESS TO SATISFY THE NIP OBLIGATION**

4.1 Once the successful Tenderder (contractor) has made contact with and furnished the DTI with the information required, the following steps will be followed:

a. the contractor and the DTI will determine the NIP obligation;
b. the contractor and the DTI will sign the NIP obligation agreement;
c. the contractor will submit a performance guarantee to the DTI;
d. the contractor will submit a business concept for consideration and approval by the DTI;
e. upon approval of the business concept by the DTI, the contractor will submit detailed business plans outlining the business concepts;
f. the contractor will implement the business plans; and
g. the contractor will submit bi-annual progress reports on approved plans to the DTI.

4.2 The NIP obligation agreement is between the DTI and the successful Tenderder (contractor) and, therefore, does not involve the purchasing institution.

Tender number: _____ Closing date: _____

Name of tenderer: _____

Postal address: _____

_____

Signature: _____ Name (in print): _____

Date: _____

# T2.27 - PROOF OF REGISTRATION ON CENTRAL SUPPLIERS DATABASE

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Bid no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

ATTACH A COPY OF PROOF, THAT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIERS DATABASE TO THIS PAGE FOR ADJUDICATION PURPOSES

**NOTE**

In the case of a Tender by a Joint Venture, copies of proof of registration on the Central Suppliers Data Base in respect of each party to the Joint Venture must be attached to this page

# T2.28 - PROOF OF CIDB REGISTRATION NUMBER

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

ATTACH A COPY OF PROOF, THAT THE TENDERER IS REGISTERED WITH THE CONSTRUCTION INDUSTRY DEVELOPMENT BOARD (CIDB) TO THIS PAGE FOR ADJUDICATION PURPOSES

**NOTE**

In the case of a Tender by a Joint Venture, copies of proof of registration with the CIDB in respect of each party to the Joint Venture must be attached to this page

# T2.29 MANDATORY TECHNICAL CRITERIA

The following section contains the Mandatory Technical requirements for this bid and may include but is not limited to equipment/plant requirements, personnel requirements, minimum level of experience, professionals required, certifications required, minimum financial requirements, etc. Should the tenderer fail any of the criteria in T2.29, the tender will be deemed non-responsive and will be excluded from further evaluation. This evaluation forms part of Stage 1.

**T2.29 Mandatory Technical Criteria**

**Successful tenderers must pass all technical criteria as set out below. If below table is blank then Mandatory Technical Criteria is not applicable on this tender.**

| | Criteria | Deliverable Required | Deliverable meets Criteria (YES / NO) (FOR USE BY EVALUATION COMMITTEE) | Comments (FOR USE BY EVALUATION COMMITTEE) |
|---|---|---|---|---|
| | Contractor to complete Annexure 10 - Project Specifications -St. Mary's Hospital – Nurses Residence Generator Replacement whereby the proposed equipment from the bidder must be either an equivalent to or better than the KZN DOH Project Specifications for the Generator and Fuel System | Yes - Annexure 10 - Project Specifications -St. Mary's Hospital – Nurses Residence Generator Replacement | | |
| | | | | |

# T2.30 CONTRACT FORM - PURCHASE OF GOODS/WORKS-Part 1

THIS FORM MUST BE FILLED IN DUPLICATE BY BOTH THE SUCCESSFUL TENDERER (PART 1) AND THE PURCHASER (PART 2). BOTH FORMS MUST BE SIGNED IN THE ORIGINAL SO THAT THE SUCCESSFUL TENDERER AND THE PURCHASER WOULD BE IN POSSESSION OF ORIGINALLY SIGNED CONTRACTS FOR THEIR RESPECTIVE RECORDS.

**PART 1 (TO BE FILLED IN BY THE TENDERER)**

1. I hereby undertake to supply all or any of the goods and/or works described in the attached tendering documents to Head: Health (Department of Health: Province of KwaZulu-Natal) in accordance with the requirements and specifications stipulated in tender number ZNB 5245/2023-H at the price/s quoted.
2. The following documents shall be deemed to form and be read and construed as part of this agreement:
   (i) Tendering documents, viz
   - Invitation to tender;
   - Tax Compliance Status (TCS) **PIN**;
   - Pricing schedule(s);
   - Technical Specification(s);
   - Preference claims for Specific Goals in terms of the Preferential Procurement Regulations 2022;
   - Declaration of interest;
   - Declaration of Tenderder's past SCM practices;
   - Certificate of Independent Tender Determination
   - Special Conditions of Contract;

   (ii) General Conditions of Contract for construction works Edition 2 - GCC2010; and
   (iii) Other (specify)
3. I confirm that I have satisfied myself as to the correctness and validity of my Tender; that the price(s) and rate(s) quoted cover all the goods and/or works specified in the Tenderding documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.
4. I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this agreement as the principal liable for the due fulfilment of this contract.
5. I declare that I have no participation in any collusive practices with any Tenderder or any other person regarding this or any other Tender.
6. I confirm that I am duly authorised to sign this contract.

NAME (PRINT): _____

CAPACITY: _____

SIGNATURE: _____

NAME OF FIRM: _____

DATE: _____

Witnesses:

1. _____

2. _____

Date:

# T2.31 CONTRACT FORM - PURCHASE OF GOODS/WORKS-Part 2

**PART 2 (TO BE FILLED IN BY THE PURCHASER)**

1. I _____ in my capacity as

_____

accepts your tender under reference ZNB 5245/2023-H dated _____for the supply of goods/works indicated hereunder and/or further specified in the annexure(s).

2. An official order indicating delivery instructions is forthcoming.
3.

| ITEM NO. | PRICE (ALL APPLICABLE TAXES INCLUDED) | BRAND | DELIVERY PERIOD |
|---|---|---|---|
| | | | |

4. I confirm that I am duly authorised to sign this contract.

SIGNED AT _____ON_____
*[Place]* *[Date]*

NAME (PRINT): _____

SIGNATURE: _____

OFFICIAL STAMP:

Witnesses:

1. _____

2. _____

Date:

# T2.32 - OHSE PLAN STRUCTURE

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

A detailed OHSE Plan is to be submitted by the successful tenderer as per Construction Regulation 7(1)(a). The following are the minimum standard legal documentation that must form part of the OHSE Plan based on the risks attached in executing this project titled;

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

REFER TO ANNEXURE 11

| T2.33 - OHSE CLIENT SPECIFIC REQUIREMENTS | |
|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** |
| **Tender no:** | **ZNB 5245/2023-H** |
| **Project Code:** | **222728** |

REFER TO ANNEXURE 11

| T2.34 - BASELINE RISK ASSESSMENT | |
|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** |
| **Tender no:** | **ZNB 5245/2023-H** |
| **Project Code:** | **222728** |

REFER TO ANNEXURE 11

## T2.36 - Functionality Criteria

The threshold score, below which tenderers are eliminated from further consideration is **60** points

TENDER EVALUATION CRITERIA AND SCORING

The weighting for Functionality is as follows:

| | Evaluation Criteria | Deliverables | Points | Sub-Points | | Sub-Criteria |
|---|---|---|---|---|---|---|
| 1 | Competency and experience of the tenderer on similar type of projects (generator installations) | The following documents to reflect the information captured in the schedule of projects:<br>- Attach Letter of Award/Order<br>- Attach Completion Certificates - signed by the Institution Client/Engineer /Principal Agent indicating successful completion for each project | 40 Points | 40 | Sub-points | Full information on five (5) or more projects in the past 5 years or less. |
| | | | | 20 | Sub-points | Full information on two to four (2-4) projects in the past 5 years or less. |
| | | | | 5 | Sub-points | Full information on one (1) project in the past 5 years or less. |
| | | | | 0 | Sub-points | No information or incomplete information. |
| 2 | Tenderer's Project Experience of Resources Proposed for the Project | Tenderer to include the following information to reflect the information provided in the organogram:<br>- All names and surnames provided, all roles & capacity clearly outlined and CVs for all of them | 30 Points | 15 | Sub-points | Trade Tested Electrician with proof of experience (more than 8 years) in generator installations.<br>- Attach copy of relevant CV with relevant experience (10 points) or else no points will be scored (0 points)<br>- Attach copy of trade test certificate (5 points) or else no points will be scored (0 points). |
| | | | | 15 | Sub-points | Electrician with Wireman's Licence with experience (more than 10 years) in generator installations.<br>- Attach copy of relevant CV with relevant experience (10 points) or else no points will be scored (0 points)<br>- Attach copy of trade test certificate (5 points) or else no points will be scored (0 points) |
| 3 | Submission of Schedule of Equipment: Part FOUR Annexure 10 | Schedule of Equipment: Part FOUR Annexure 10 in attached as for the 250kVA generator fully completed. NB: Only equipment/brands with proven history will be accepted and if not furnished, will lead to automatic disqualification. | 30 Points | 30 | Sub-points | Fully completed Schedule of Equipment: Part Four for 1 x 250kVA prime indoor unit generator<br>- Proposed generator MUST meet minimum requirements outlined in Annexure 10: Project Specifications (30 points) or else no points will be scored (0 points) |
| | | | | 0 | Sub-points | Incomplete or No submission of Schedule of equipment: Part Four Annexure 10 |

**TENDER EVALUATION CRITERIA AND SCORING PRICE AND SPECIFIC GOALS**

| | **Evaluation Criteria** | **Deliverables** | | **Points** |
|---|---|---|---|---|
| | Price | The lowest responsive and responsible priced offer shall be allocated 80 points. All other responsive and responsible offers shall be allocated a prorated point value based on the lowest responsive and responsible priced offer. | 80 | Points |
| | Specific Goals | The points allocated to each tenderer for Specific Goals. In this regard, the points score for this criteria for each tenderer, shall be determined as follows:<br><br>- full points(20 points) to companies who are at least 51% Owned by Black People | 20 | Points |

# PART A
## INVITATION TO TENDER - SBD 1

| | | | | | |
|---|---|---|---|---|---|
| **ZNB 5245/2023-H** | | | | | |
| **TENDER NUMBER:** | ZNB 5245/2023-H | **CLOSING DATE:** | As Per Tender Advert | **CLOSING TIME:** | 11:00 |
| **DESCRIPTION** | St. Mary's Hospital – Nurse's Residence Generator Replacement | | | | |

**THE SUCCESSFUL TENDERER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT**

TENDER RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE TENDER BOX SITUATED AT *(STREET ADDRESS)*

**SUPPLIER INFORMATION**

| | | | | |
|---|---|---|---|---|
| NAME OF TENDERER | | | | |
| POSTAL ADDRESS | | | | |
| STREET ADDRESS | | | | |
| TELEPHONE NUMBER | CODE | | NUMBER | |
| CELLPHONE NUMBER | | | | |
| FACSIMILE NUMBER | CODE | | NUMBER | |
| E-MAIL ADDRESS | | | | |
| VAT REGISTRATION NUMBER | | | | |
| | **TCS PIN:** | | **CSD No:** | |

| | | | | |
|---|---|---|---|---|
| B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE (Tick YES or NO) | Yes | | B-BBEE STATUS LEVEL SWORN AFFIDAVIT (Tick YES or NO) | Yes |
| | No | | | No |
| If YES, State the name of the verification agency accredited by SANAS | | | | |

***[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/SWORN AFFIDAVIT(FOR EMEs& QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]***

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED? | Yes | | NO | | ARE YOU A FOREIGN BASED SUPPLIER FOR **THE GOODS /SERVICES** | YES | | NO | |
| | **[IF YES ENCLOSE PROOF]** | | | | **(IF YES ANSWER PART B:3 BELOW)** | | | | |
| **SIGNATURE OF TENDERER** | | | | | **DATE** | | | | |
| **CAPACITY UNDER WHICH THIS TENDER IS SIGNED (Attach proof of authority to sign this tender; e.g. resolution of directors, etc.)** | | | | | | | | | |
| **TOTAL NUMBER OF ITEMS OFFERED** | | | | | **TOTAL TENDER PRICE (ALL INCLUSIVE)** | | | | |

| **TENDERING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:** | | **TECHNICAL INFORMATION MAY BE DIRECTED TO:** | |
|---|---|---|---|
| DEPARTMENT/ PUBLIC ENTITY | | CONTACT PERSON | |
| CONTACT PERSON | | TELEPHONE NUMBER | |
| TELEPHONE NUMBER | | FACSIMILE NUMBER | |
| FACSIMILE NUMBER | | E-MAIL ADDRESS | |
| E-MAIL ADDRESS | | | |

## PART B

## TERMS AND CONDITIONS FOR TENDERER - SBD 1

1.5. THIS TENDER IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER LEGISLATION OR SPECIAL CONDITIONS OF CONTRACT.

**2. TAX COMPLIANCE REQUIREMENTS**

2.1 TENDERERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.

2.2 TENDERERS 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 TAX COMPLIANCE STATUS (TCS) 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 TENDERERS MAY ALSO SUBMIT A PRINTED TCS TOGETHER WITH THE Tender.

2.5 IN TENDERS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE PROOF OF TCS / PIN / CSD NUMBER.

2.6 WHERE NO TCS IS AVAILABLE BUT THE TenderDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

**3. QUESTIONNAIRE TO TenderDING FOREIGN SUPPLIERS**

| | | | | |
|---|---|---|---|---|
| 3.1. IS THE TENDERER A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? | YES | | NO | |
| 3.2. DOES THE TENDERER HAVE A BRANCH IN THE RSA? | YES | | NO | |
| 3.3. DOES THE TENDERER HAVE A PERMANENT ESTABLISHMENT IN THE RSA? | YES | | NO | |
| 3.4. DOES THE TENDERER HAVE ANY SOURCE OF INCOME IN THE RSA? | YES | | NO | |

**IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN, IT IS NOT A REQUIREMENT TO OBTAIN A TAX COMPLIANCE STATUS / TAX COMPLIANCE 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 MAY RENDER THE TENDER INVALID.**

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# THE CONTRACT

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# C1 - AGREEMENT AND CONTRACT DATA

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# FORM OF OFFER AND ACCEPTANCE

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# C.1.1 - FORM OF OFFER AND ACCEPTANCE

THE OFFER AND ACCEPTANCE FORM IS BOUND INTO **SECTION 1** (See end of Returnable Documents) OF THIS DOCUMENT AS PART OF THE RETURNABLE DOCUMENTS. ONCE A CONTRACT IS CONCLUDED WITH A SUCCESSFUL TENDERER, THIS PAGE WILL BE REPLACED WITH THE FILLED AND SIGNED OFFER AND SIGN ACCEPTANCE BY THE EMPLOYER AND IT WILL BECOME PART OF THE CONTRACT.

PLEASE SUBMIT THE OFFER AND ACCEPTANCE FORM WITH THE OTHER RETURNABLE DOCUMENTS.

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# C1.2 - CONTRACT DATA

## C 1.2 CONTRACT DATA:

## CONTRACT DATA FOR:

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

**Tender no:** **ZNB 5245/2023-H**

The General Conditions of Contract are the clauses contained in the General Conditions of Contract (2010) (Second Edition) published by the South African Institution of Civil Engineering. Copies of these conditions of contract may be obtained through most regional offices of the South African Institution of Civil Engineering, telephone number 011 805 5947 or by visiting their website at www.saice.org.za.

**CONTRACT SPECIFIC DATA**
The following contract specific data are applicable to this contract:

**CONTRACT VARIABLES**

This schedule contains all variables specific to this document and is divided into pre-tender and post-tender categories. The pre-tender category must be completed in full and included in the tender documents. Both the pre-tender and post-tender categories form part of this **agreement.**

Spaces requiring information must be filled in, shown as 'not applicable' or deleted but not left blank. Where choices are offered, the non-applicable items are to be deleted. Where insufficient space is provided the information should be annexed hereto and cross referenced to the applicable clause of the schedule. Key cross reference clauses are italicised in *[ ]* brackets.
**The Engineer/Principal Agent, in accordance with Clause 1.1.1.16, shall obtain the specific approval from the Employer before executing any of his functions according to the "Conditions under which Consultants are appointed", or in the event where an employee of the Employer represents the Employer, the relevant General Delegations applicable at the time of executing his/her duties as described in Clause 3.1.2.**

**PRE-TENDER INFORMATION**

**CONTRACTING AND OTHER PARTIES**

*[1.1.1.15]* **Employer:**

**Head: Department of Health (KZN Department of Health: Province of KwaZulu-Natal)**

Postal address:
***Private Bag X 9051***
***Pietermaritzburg***
***3200***

Tel: ***033 - 940 2400*** Fax: ***033 - 940 2400***

*[1.2.1.2]* Physical address:
***310 Jabu Ndlovu Street***
***Pietermaritzburg***
***3200***

**Tender no:** **ZNB 5245/2023-H**

**PART 1: DATA PROVIDED BY THE EMPLOYER**

*[1.1.1.13]* **Defects Liability Period**

The defects liability period is: **12 months**
Defects Liability Period is Applicable for the whole of the Works

**Latent Defect Period**

*[5.16.3]* The latent defect period is: 5 years after the Final Approval Certificate

**Documentation required before Commencement of the Works:**

*[5.3.1]* The documentation required before commencement with the Works execution are;

| | | |
|---|---|---|
| *[4.3]* | Health and Safety Plan | The Contractor shall deliver his Health and Safety Plan of the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date. |
| *[5.6]* | Initial Programme | The Contractor shall deliver his programme of work within 10 calendar days after notice from the Employer, prior to the Commencement Date. |
| *[6.2]* | Guarantee | The Contractor shall deliver his chosen Guarantee (security) for this Works within 14 calendar days after notice from the Employer, prior to the Commencement Date. |
| *[8.6]* | Insurance | The Contractor shall deliver his insurance for the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date. |
| | Cash flow by contractor | The Contractor shall deliver his Cash flow for the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date. |
| | Priced Bill of Quantity | The Contractor shall deliver his Priced Bill of Quantity within 14 calendar days after notice from the Employer, prior to the Commencement Date. |
| | Programme | The Contractor is required to submit his Programme of Works in terms of Clause 5.6.1 and 5.3.1 and the Principal Agent is required to approve this within 7 days in terms of Clause 5.6.3 |
| | Other requirements | Annexure 10 - Project Specifications -St. Mary's Hospital – Nurses Residence Generator Replacement |

*[5.3.2]* The time to submit the documentation required before commencement with Works execution is: 14 calendar days

| | | |
|---|---|---|
| | **Non-Working days** | |
| [5.8.1] | Non-Working days | **Sundays** |
| | Special non- working days | **All Nationally Recognized Public Holidays and the year end break** |
| [5.8.1] | First Year end break - commences | ***16-Dec-23*** |
| | ends on | ***15-Jan-24*** |
| | Second Year end break - commences | ***16-Dec-24*** |
| | ends on | ***13-Jan-25*** |
| | Third Year end break - commences | ***N/A*** |
| | ends on | ***N/A*** |
| | Fourth Year end break - commences | ***N/A*** |
| | ends on | ***N/A*** |
| | **Engineer/Principal Agent to consult with Employer** | |
| [3.1.3] | The Engineer shall obtain the specific approval from the Employer before executing any of his functions according to the "Conditions under which Consultants are appointed", or in the event where an employee of the Employer represents the Employer, the relevant General Delegations applicable at the time of executing his/her duties. | |
| | **Security** | |
| [6.2.1] | The time to deliver the deed of guarantee is Prior to site hand over in terms of clause 5.3.1 and 5.3.2. | |
| [6.2.1] | Please see CONTRACT DATA - below to select Guarantee Option | |
| | **Commencement Date** | |
| | Commencement date means the date of Site Hand over that should not occur prior to the tenderer receiving one fully signed copy of the Offer and Acceptance in terms of the Form of Offer and Acceptance. | |
| | *The **Agreement comes into effect** on the date when;*<br>*The tenderer receives one fully completed original copy of this document , including the Schedule of Deviations (if any)*<br><br>*The agreement ("this document") consists of;*<br>*1. Agreement and Conditions of Contract.*<br>*2. Form of Offer and Acceptance.*<br>*3. Contract Data.*<br>*4. Scope of Works.*<br>*5. Site Information.*<br>*6. Drawings & documents referred to in the 1 to 4 above.*<br><br>*(See Form of Offer and Acceptance)* | |
| [5.3.1] | The contractor shall commence executing the Works within 7 calendar days from the Commencement Date. | |
| [5.4.1] | ***Possession of the* site** will be given within 10 calendar days after the **contractor** has fulfilled the conditions (4.3, 5.6, 6.2, 8.6) and received the notification from the Employer of Site Hand Over where the contractor will receive one fully signed copy of the Form of Offer and Acceptance from the **employer.** | |
| [5.6.1] | The Contractor shall deliver his programme of work within 10 calendar days after notice from the Employer, prior to the Commencement Date. | |
| | **CONTRACT DETAILS** | |
| [1.1.1.33] | ***Works*** description: Refer to document C3 – Scope of Work. | |
| [1.1.1.30] | ***Site*** description: Refer to document C4 – Site Information. | |
| | Specific options that are applicable to a **State** organ only<br>Where so : | |
| [6.10.6.2] | ***1)*** Interest rate legislation:<br>***(a)*** in respect of interest owed by the **employer**, the interest rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975), will apply; and<br><br>***(b)*** in respect of interest owed to the **employer**, the interest rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999), will apply | |
| | ***2)*** Lateral support insurance to be effected by the contractor: | ***Yes*** / ***No X*** |
| | ***3)*** Payment will be made for materials and goods | ***Yes X*** / ***No*** |
| | ***4)*** Dispute resolution by litigation | ***Yes*** / ***No X*** |
| | ***5)*** Extended **defects** liability period applicable to the following elements: | ***Electrical, Mechanical and Civil work*** |
| [8.6.1.1.2] | The Value of material, supplied by the Employer, and not included in the Contract Price, is: | ***R0.00*** |
| [8.6.1.1.3] | The amount to cover Professional Fees, not included in the Contract Price, for repairing damage and loss to be included in the insurance:<br>***30% of the Contract Price*** | |
| [8.6.1.1] | The value of Works Insurance, including SASRIA cover, taken by the contractor on this contract shall be: | ***Contract sum + 30%*** |
| [8.6.1.3] | The limit for indemnity for liable insurance is: | ***Contract Sum + 30%*** |
| | The value of Public Liability Insurance cover, taken by the contractor on this contract shall be: | ***R5 million*** |
| [6.5.1.2.3] | The percentage allowance to cover overhead charges for contractor and subcontractors, is: | ***33.00%*** |
| [1.1.1.14] | **Practical Completion Date** | |
| | The Practical Completion date is: **A time measured from the Commencement date.** | |
| | For the **works** as a whole:<br>The whole of the works shall be completed within: | ***9*** *Months (which shall be deemed to include all Non – Working Days, Special Non – Working Days and the year-end Builders Annual Industry Holiday Periods).* |
| [5.5.1] | The date for **practical completion** shall be | ***To be determined after Commencement*** |
| [5.13.1] | The penalty per calendar day shall be : | ***0.04% of the Contract Price, rounded to the nearest R10*** |

| | |
|---|---|
| | ***For the* works** in **sections:** |
| | ***The date for* practical completion** from the **commencement date** and the **penalty** per **calendar day:** |
| | Portion 1: |
| *[5.5.1]* | ***N/A*** |
| *[5.13.1]* | ***0.04% of the Contract Price, rounded to the nearest R10*** |
| | Portion 2: |
| *[5.5.1]* | ***N/A*** |
| *[5.13.1]* | ***0.04% of the Contract Price, rounded to the nearest R10*** |
| | Portion 3: |
| *[5.5.1]* | ***N/A*** |
| *[5.13.1]* | ***0.04% of the Contract Price, rounded to the nearest R10*** |
| | Portion 4: |
| *[5.5.1]* | ***N/A*** |
| *[5.13.1]* | ***0.04% of the Contract Price, rounded to the nearest R10*** |
| | Portion 5: |
| *[5.5.1]* | ***N/A*** |
| *[5.13.1]* | ***0.04% of the Contract Price, rounded to the nearest R10*** |
| | Portion 6: |
| *[5.5.1]* | ***N/A*** |
| *[5.13.1]* | ***0.04% of the Contract Price, rounded to the nearest R10*** |
| *[1.3.2]* | ***The* law** applicable to this **agreement** shall be that of the: **Republic of South Africa** |
| *[6.10.1.5]* | The percentage advance on materials not yet built into the Permanent Works is: ***80.00%*** <br> ***Percentage of advance on material shall only be paid to Contractor upon successful acceptance of Factory Acceptance Test and delivery to site and set on designated plinth for the installation.*** |
| *[6.10.3]* | Percentage retention on amounts due to contractor is: ***The Percentage retention is nil. The only security required by the Employer will be such as selected by the Contractor on the Form of Offer and Acceptance and Part 2: CONTRACT DATA PROVIDED BY THE CONTRACTOR, point 2 - Documents, of the Contract Data.*** <br> Maximum retention is: ***0.00%*** *of the Contract Price* |
| *[6.8.1]* <br> *[6.8.2]* <br> *[6.8.3]* <br> *[6.8.2]* <br> *[6.8.3]* | Notwithstanding anything to the contrary contained in the General conditions of Contract and Preliminaries, this contract is a fixed price contract and not subject to any Contract Price Adjustment Factors. |
| *[5.14.5]* | ***The following clause must be added to clause 5.14.5:*** <br> *[5.14.5.6]* The employers agent shall submit the **final account** within 3 calendar months to the principal agent. |
| *[10.5]* <br> *[10.5.3]* <br> *[10.9.1]* | The determinations of disputes shall be by ARBITRATION ONLY. <br> The number of Adjudication Board Members to be appointed is: **Three** <br> Replace the last part of the clause with the following: *"..on the application of either party, by the Chairman, or his nominee of the Association of Arbitrators."* |
| | |
| | ***Clause*** |
| *[1.1]* | *[1.1.1.5]* **COMMENCEMENT DATE** – means the actual date of Site Hand over that should not occur prior to the Tenderer receiving one fully signed copy of the Offer and Acceptance in terms of the Form of Offer and Acceptance. |
| | *[5.12.2.2]* **ABNORMAL CLIMATIC CONDITIONS** - means conditions over and above what could reasonably be expected for the specific locality where the Works are being executed and include inter alia exessive rain, heat, cold, wind and any other climatic condition that would not normally be experienced during the season that the Works are executed in that area. The South African Weather Service's (http://www.weathersa.co.za) 10 year average climatic conditions statistics would be what could be reasonably expected for the specific locality where the Works are executed. |
| | *[6.2.1]* **CONSTRUCTION GUARANTEE** – means an on demand guarantee at call obtained by the **contractor** from an institution approved by the **employer** in terms of the **employer's** construction guarantee form as selected in the Offer and Acceptance Form and the **contract data.** |
| | **CONSTRUCTION PERIOD** – means the period commencing on the **commencement date** and ending on the date of **due completion date.** This period will be deemed to commence on actual site hand over date to the contractor and end on the date of practical completion and shall include all annual industrial holiday periods, Sundays and public holidays. |
| | **CORRUPT PRACTICE** – means the offer, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. |
| | **FINAL ACCOUNT** - The document prepared by the principal agent, which reflects the contract value of the works at final approval or termination. |
| | **FRAUDULENT PRACTICE** – means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any tenderer and includes collusive practise among tenderers (prior to or after the tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the tenderer of the benefits of free and open competition. |

**INTEREST –** the interest rates applicable on this contract, whether specifically indicated in the relevant clauses or not, will be in terms of the legislation of the Republic of South Africa, and in particular:

(a) in respect of interest owed by the **employer,** the interest rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975), will apply; and

(b) in respect of interest owed to the employer, the interest rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999), will apply

*[1.1.1.16]* **ENGINEER/PRINCIPAL AGENT –** means the person or entity appointed by the **Employer** and named in the **Contract Data** as the **Engineer /Principal Agent** to act as agent of the **Employer**. In the event of an Engineer/**Principal Agent** not being appointed, then all the duties and obligations of an Engineer/**Principal Agent** as detailed in the **Contract** shall be fulfilled by a representative of the **Employer** as named in the **Contract Data. (Hereafter referred to as Engineer)**

*[1.1.1.21]* **GENERAL ITEMS -** or preliminaries means items stipulated in the Pricing Data relating to general obligations, site services, facilities and/or items that cover elements of the cost of the work which are not considered as proportional to the quantities of the Permanent Works.

*[4.4.1]* Add the following to the clause 4.4.1: *"The Contract shall only use subcontractors who are duly registered with the CIDB and who has an ACTIVE status at the time of submitting the tender"*

*[6.2.1]* Refer to Offer and Acceptance form for the various options that the contractor may choose from in providing a form of **Guarantee** under "GUARATEE OPTIONS".

*[6.10.6.2]* Replace *"at the prime overdraft rate, as charged by the Contractor's Bank,"* with *"..at the interest rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975).* "
Omit *",on all overdue payments from the date on which the same should have been paid..." and replace with " only after 30 calendar days from receiving written notice from the Contractor that the amount is overdue,.."*

**SPECIAL CONDITIONS OF CONTRACT**

*[5.12.3]* Omit clause 5.12.3 and add the following:
*"5.12.3. If an extension of time is granted, the Contractor shall be paid such additional time-related General Items, including for special non-working days, if applicable as are appropriate regarding to any other compensation which may already have been granted in respect of the circumstances concerned.The reasons for extension of time that would invoke payment of time related General Items are inter alia;*

*5.12.3.1 Failure to give possession of the site to the contractor.*
*5.12.3.2 Making good physical loss and repairing damage to the works where the contractor is not at risk.*
*5.12.3.3 Contract instructions not occasioned by default by the contractor.*
*5.12.3.4 Failure to issue construction information timeously or the late issue of a contract instruction following a request from the contractor.*
*5.12.3.5 Late acceptance by the principal agent of a design undertaken by a selected subcontractor where the contractor's obligations have been met.*
*5.12.3.6 Suspension or cancellation termination invoked by a nominated or selected n/s subcontractor due to default by the employer or the principal agent.*
*5.12.3.7 Insolvency of a nominated subcontractor.*
*5.12.3.8 A direct contractor.*
*5.12.3.9 Opening up and testing of work and materials and goods where such work is according to in accordance with the contract documents.*
*5.12.3.10 The execution of additional work for which the quantity included in the bills of quantities is not sufficiently accurate.*
*5.12.3.11 Late or failure to supply materials and goods for which the employer is responsible.*
*5.12.3.12 Suspension of the works."*

*[5.14.5.1]* Omit entire clause 5.14.5.1

*[5.16.4]* Add the following new clause *"5.16.4. Upon the issue of a Final Approval Certificate, unless otherwise provided in the Contract:*
*5.16.4.1. The performance Guarantee (if any) shall be returned within 14 days to the guarantor in terms of Clause 7."*

*[6.2.3]* Add to clause 6.2.3 the following "*The Contractor shall provide proof of paid-up premium payments to accompany his payment certificate as proof that his performance guarantee has not expired yet. The Contractor will not receive payment without proof of the validity of their performance guarantee.*

*[9.3.2.2]* Omit *"without prejudice to the exercise of any lien the Contractor may have acquired over the Employer's property."*

Duties and functions of the **Engineer** requiring the specific approval of the **Employer** BEFORE execution of any part of these duties are as follows:

(a) Determinations of contractors claims for extension of time (revision of the contract completion date). All claims for extension of time shall be submitted by the **Engineer,** together with the **Engineer's** recommendations, to the **Employer** for determination. Omit "Engineer" in clause 42.2 and replace with

(b) Drawings, instructions or communications of any kind requiring variations of the works and involving EXTRA's shall NOT be given effect by the **Contractor** UNTIL Official Variation Order submission including the Financial Request for Additional Funds, has been approved and signed by the **Head of Department: Health**

(c) Insurance policies to be approved by the **Employer** within 21 days of the date of the **Commencement** of the Works.

(d) Any notice of disagreement raised by the **Contractor** or written Dispute Notice given by the **Contractor** to the **Engineer** shall be submitted by the **Engineer**, together with the **Engineer's** recommendations, to the **Employer** for determination.

(e) The issue of the certificate of practical completion, certificate of completion and the final approval certificate shall be signed and submitted by the **Engineer**, to the **Employer** for final approval and signature. The certificates shall not be considered as officially issued until signed by the **Employer**.

**MANAGING PROJECT DURATION**

(a) The Contractor shall co-ordinate his programme with all other contractors whose work may precede or be executed simultaneously to his own. The Contractor will be called upon to plan and control the project using the Project Evaluation and Review Technique (PERT) or other approved Critical Path Method (CPM) network analysis of his events and activities and those of the sub-contractors in his employ and must co-ordinate his planning with any other contractor employed on the project. A fortnightly project control report will be expected from the Contractor in writing, evaluating any gains or delays against the critical path and he should allow for all costs involved in planning reviewing and updating the programme to the satisfaction of the Principal Agent against this item.

(b) Activity-and total float shall belong to the Employer.

(c) The Contractor shall deliver his programme of work within 10 calendar days after notice from the Employer, prior to the Commencement Date.
It is a condition of this contact that, the contracter submit to the Engineer/principal agent a detailed CPM Programme which shall be to the approval of the Engineer/principal agent. In this regard tenderers are advised to consult with the Engineer/Principal Agent as to the format and requirements of the programme as no claim whatsoever will entertained should the programme fail to meet the requirements of the Engineer/Principal Agent. Failure to submit the programme within the stipulated time may result in the contractor being held in breach of contract.

The approved programme will form the basis of time management of the project and extension of time will not be guaranteed unless the Contractor has strictly complied with this provision.

The programme shall make allowance for inclement weather at 3 workings days per month.

**INCLEMENT WEATHER AND CLAIMS FOR DELAYS IN PERFORMANCE**

(a) The Contract Sum includes a monthly allowance of 3 working days inclement weather during which rainfall exceeds 10mm per day for months as indicated in the Scope of Works. These days shall be reflected on the critical path of the Contractor's programme as specified in MANAGING PROJECT DURATION above.

(b) Claims for delays in performance due to inclement weather shall be calculated separately for each calendar month and for the project as a whole. Delays or gains to the critical path shall be reflected in all revisions of the programme. An extension of time will only be granted where the following conditions are met:

(i) The criteria to be used for WORK stoppages shall be for safety hazards or poor quality of work.

(ii) The Employer's site representative or the Employer's Principal Agent, if the site representative is not available shall be notified when the Contractor stops the work and intends to claim performance delays. The Employer representative shall inspect the situation together with the Contractor and give an immediate decision.

1. The stoppage claimed must cause a delay in the Completion Date of work. If the critical activities can proceed and a non-critical activity is delayed due to inclement weather no claims for delay shall be granted.
2. No claims for stoppages less than 2(two) hours per day shall be considered.
3. Claims granted for more than 2 (two) hours, but less than 10 (ten) hour (lunch included) day, shall be added together and expressed as full days.
4. All claims shall be submitted in writing to the Principal Agent within one working day of the actual stoppage.
5. The total delay in performance granted to the Contractor expressed in days shall be added to the contractual Completion Date of each section of the Works. The contractual penalty clause shall only come into effect after this newly arrived date.
6. Total delays (in hours) will be rounded up or down to the nearest integer for the calculation of Working Days. The total hours (including lunch) per Working Day shall be 10 unless otherwise indicated on the Contractor's programme.
7. Where the programmed delays for inclement weather exceed the actual delays incurred the Completion Date(s) will not be adjusted.
8. Where the project includes builder's holidays the programmed durations for inclement weather shall be adjusted pro-rate to the actual Working Days.
9. The total of all monthly delays due to inclement weather shall be calculated in accordance with the example given below:

| Description | | Months | | | | | Total |
|---|---|---|---|---|---|---|---|
| | | Sept | Oct | Nov | Dec | Jan | |
| | | Hours | Hours | Hours | Hours | Hours | Hours |
| Programmed | Rain days | 0 | 30 | 30 | 15 | 15 | 90 |
| Actual | Rain days | 16 | 22 | 35 | 15 | 18 | 106 |
| Difference | | -16 | 8 | -5 | 0 | -3 | -16 |
| 8 hrs/day* | | | | | | Estimated Extension of time - in working days | 2 |

***See point 5.2 in the Scope of Works for the specific days the tenderer must allow for in this contract.***

| Tender no: | ZNB 5245/2023-H | Part 2: CONTRACT DATA PROVIDED BY THE CONTRACTOR: |
|---|---|---|

**POST-TENDER INFORMATION**

**Note:** All information for this section requires consultation with the **Contractor**. The **Engineer/Principal Agent** shall not pre-select any of the alternatives available to the **Contractor.**

**1 CONTRACT DETAILS**

*[1.1.1.9]* **Contractor Name:** .....

*[1.2.1.2]* Postal address:

.....

.....

.....

Tel no ..... Fax no .....

Tax / VAT Registration No: ..... e-mail .....

Physical address:

.....

.....

.....

*[1.1.1.10]* The accepted **contract price** inclusive of **tax** is R :

.....

*[Amount in words]*

**Payment Of Preliminaries (Clause 6.7, 6.8, 6.10 and 6.11)**

| The preliminaries amounts shall be paid in terms of: | | |
|---|---|---|
| | ***Alternative A** | **Yes** |
| | ****Alternative B** | **N/A** |

** Assessed by the Engineer/Principal Agent as an amount prorated to the value of the Work duly executed in the same ratio as the Preliminaries bears to the Contract Price excluding VAT, Preliminary amount, Contingencies and any CPAP.*

*** Calculated from the priced Bill of Quantity/Lump Sum document. The Contractor and the Engineer/Principal Agent shall agree on a division of the priced Preliminaries items into: initial establishment charge, monthly charge and final disestablishment charge.*

If the Contractor and the Engineer/Principal Agent can not agree, within 10 Working Days from the Commencement Date, on such a division then the Engineer/Principal Agent shall make a division of the Preliminaries to be incorporated in the valuations for each monthly payment certificate as follows;

10% of the General Items/Preliminaries amount shall not be varied

15% of the General Items/Preliminaries shall only be varied in proportion of the Contract Price to the Contract Sum

75% of the General Items/Preliminaries shall be varied in proportion to the revised Construction Period compared with the initial Construction Period.

**Alternative A**

**Adjustment of Preliminaries (Clause 6.7, 6.8, 6.10 and 6.11)**

For the adjustment of Preliminaries both the Contract Sum and the Contract Value (including tax) shall exclude the amount of Preliminaries, all Contingency Sum(s) and any provision for Cost Price Adjustment Provisions:-

- An amount which shall not be varied.

- An amount varied in proportion to the contract value as compared to the Contract Sum.

- An amount varied in proportion to the Construction Period as compared to the initial Construction Period (excluding revisions to the Construction Period to which the Contractor is not entitled) to adjustment of the Contract Value in terms of the agreement.

The Contractor shall provide a breakdown of charges (including tax) within 15 working days of the date of acceptance of tender and, where applicable, an apportionment of Preliminaries per section

If the Contractor and the Principal Agent cannot agree, within ten (10) Working Days from the Commencement Date, on such a division then the Principal Agent shall make a division of the Preliminaries to be incorporated in the valuations for each monthly payment certificate as follows;

0% of the amount shall not be varied

10% of the amount shall not be varied

15% varied in proportion of the Contract Value to the Contract Sum

75% varied in proportion to the revised Construction period compared with the initial Construction Period

**Sectional Completion : Subdivision of Preliminaries Costs**

For the adjustment of preliminaries for sections of the work the value of fixed, value, and time related amounts of the preliminaries for each section is required. The contractor is to provide such information within fifteen (15) working days of taking possession of the site, failing which the categorised preliminaries amounts shall be prorated to the value of each section.

The above shall apply equally for projects where sectional completion was not contemplated at tender stage but subsequently occurred on an adhoc basis during construction of the works as agreed between the client and the employer. The original priced categorised amounts for fixed, value, and time related amounts shall be prorated to the value of each section.

When an extension of time has been granted in terms of the GCC and the preliminaries require to be adjusted accordingly, the pertinent sectional (subdivided) categorised preliminaries amounts shall be utilised, where applicable and not the overall preliminary amounts.

Where sectional completion is required in terms of the agreement, the Contractor shall provide the Principal Agent with the division of the above categorized amounts into sections. Should the Contractor fail to provide such information within the period stipulated the categorized amounts shall be prorated to the value of each section.

YES *yes / no*

*or*

**Alternative B**

The Contractor shall within 15 working days of the date of possession of the site provide the Principal Agent with a detailed breakdown of Preliminaries amounts for the works as a whole, or per section where applicable, including administrative and supervisory staff charges and for the use of construction equipment in terms of the programme.

NO *yes / no*

**The contractor is informed that only option 'A' shall apply**

| Waiver of the Contractors lien or right of continuing possession is required. | **YES** | |
|---|---|---|

| | | |
|---|---|---|
| | **GUARANTEE OPTIONS** | |
| | The Tenderer agrees to provide a bank or insurance guarantee in accordance with clause 6.2.3 of the Conditions of the GCC2010 Contract within the period stated in the Contract Data. This guarantee shall be for a sum equal to an amount stated in the Contract Data. | |
| | **Guarantees submitted must be issued by either an insurance company duly registered in terms of the Insurance Act (Long Term Insurance Act No 52 of 1998 or Short Term Insurance Act No 53 of 1998) or by a bank duly registered in terms of the Banks Act No 94 of 1990, on the pro-forma referred to above. No alterations or amendments of the wording of the pro-forma will be accepted.** | |
| | (a) the tenderer accepts that in respect of contracts up to R1 million, a payment reduction of 5% of the contact value will be applicable and will be reduced by the Employer in terms of the applicable conditions of contract. | |
| | (b) in respect of contracts above R1 million, the Tenderer offers to provide security as indicated below: select one option | |
| | (i) payment reduction of 10% of the value certified in the payment certificate (excluding VAT) | |
| | (ii) bank or insurance Performance Guarantee of 10 % of the Contract Price | |
| | (iii) bank or insurance guarantee of 5% of the Contract Price and a payment reduction of 5% of the value certified in the payment certificate (excluding VAT) | |
| **3** | **SIGNATURES OF THE CONTRACTING PARTIES** | |
| | Thus done and signed at……on ……..of……20….. | |
| | Name of signatory | for and behalf of the **Employer** who by signature hereof |
| | Capacity of signatory | as Witness. |
| | Thus done and signed at……on ……..of……20….. | |
| | Name of signatory | for and behalf of the **Contractor** who by signature hereof |
| | Capacity of signatory | as Witness. |

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# C1.3 - FORM OF GUARANTEE

# C1.3 PERFORMANCE GUARANTEE - GCC FOR CONSTRUCTION WORKS (2nd Edition - 2010)

Head: Department of Health
KZN Department of Health:
Private Bag X 9051
Pietermaritzburg
3200

Sir,

**ON DEMAND PERFORMANCE GUARANTEE**

| **Tender Number ZNB 5245/2023-H** | **Project Code 222728** |
|---|---|

For use with the General Conditions of Contract for Construction Works, Second Edition, 2010.

**GUARANTOR DETAILS AND DEFINITIONS**

"Guarantor" means: _____

Physical Address: _____

"Employer" means: The Provincial Administration of KwaZulu-Natal in its Department of Health

"Contractor" means: _____

"Engineer" means: _____

"Works" means: **St. Mary's Hospital – Nurse's Residence Generator Replacement**

"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: _____

Amount in Words:

"Guaranteed Sum" means: The maximum aggregate amount of: 10% _____
*Of Contract Sum*

Amount in Words: _____

"Expiry Date" means: _____

**CONTRACT DETAILS**

Engineer Issues: Interim Payment Certificates, Final Payment Certificates and the Certificate Completion of the Works as defined in the Contract.

PERFORMANCE 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 the 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 receipt 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 terms of 1.

7 Where the Guarantor has made payments in terms of 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 Payment 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 with seven (7) calendar days upon receipt of the first written demand to the Guarantor.

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 service 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. The original of this Guarantee shall be returned to 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 Court Act No 32 of 1944, as amended, to this 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) _____

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# PART C2 - PRICING DATA

# C2.1 PRICING INSTRUCTIONS
## GCC FOR CONSTRUCTION WORKS (Second Edition 2010)

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

## C2.1 Pricing Instructions

Where any item is not relevant to this specific contract, such item is marked N/A (signifying "not applicable")

The adjustment of the preliminaries each item priced is to be allocated to one or more of the three categories by insertion of "F", "V", "T" as the case may be against the price in the "rate" column immediately preceding the "amount" column, where "F" denotes a fixed amount (amount not varied), "V" denotes an amount variable in proportion to value and "T" denotes an amount variable in proportion to time.

**1 MASSES AND MEASURING UNITS**

These shall be in accordance with the Measuring Units and National Measuring Standards Act No. 76 of 1973 and amendments thereto.

The pages of each of these documents are numbered consecutively and before the Tenderer submits his tender he should check the number of pages, and if any are found missing or duplicated, or the figures or writing indistinct, or the documents contain any obvious error, he should apply to the Head : Health AT ONCE and have same rectified as no liability whatsoever will be admitted by the Administration in respect of errors in Tender due to the foregoing.

**2 PRICES FOR VARIATIONS**

Where prices or quotations for variations are submitted by the Contractor during the currency of the Contract, it is to be clearly understood that these are for the purpose of consideration by the Head : Health and that there is no assumption of acceptance. The Contractor will be notified of acceptance of prices or quotations either by insertion of the amount on the variation order or by written intimation.

**3** The scale to which the Drawings are made is only to be made use of when no figured dimensions are given either on the Drawings or in the tender documents and the figured dimensions are always to be followed though they may not coincide with the scale of the Drawings, but dimensions where possible are to be taken from the buildings.

**4 PROVISIONAL ITEMS**

All items described as "Provisional" shall be used as directed by the Employer and measured and valued or paid for.

No work for which "Provisional" items are allowed shall be commenced without written instructions from the Head : Health.

**5 TIMELY ORDERING OF MATERIALS**

The Contractor is warned to place all orders for materials or special articles as early as possible, as he will be held solely responsible for any delay in the delivery of such goods.
Nevertheless this tender is conditional upon no liability being attached to the Contractor if delivery of materials is rendered impossible by reason of any act of the Government.

**6 ELECTRICAL LIGHTING, POWER AND WATER**

The Contractor shall provide any artificial lighting which may be necessary or required for the proper execution of the works, and provide electric power and water required by all Sub-Contractors, Nominated Sub-Contractors and Sub-Contractors appointed directly by the Employer.

The Contractor shall give all notices and pay all fees in connection with temporary electrical and water connections and shall connect temporary Electrical and Water meters for and pay for all current and water consumed.

Tenderers are advised that the permanent light fittings and water points of any kind installed in the Works are not to be used to provide temporary lighting and supplement water requirements for construction purposes.

**7 IMPORT PERMITS, DUTIES AND SURCHARGES.**

All tenders by means of which imported products are being called for, must use the rate of exchange 14 days prior to the closing date indicated in the tender documents. If this day falls on a weekend or public holiday, the next working day must be used.

Furthermore, Tenderers must submit documentary proof (in the form of a certified copy) from their bank or legally recognised financial institution, clearly indicating what the rate of exchange was 14 days prior to the closing date, as mentioned above.

Together with this, the Tenderer must confirm that the tender price relating to an imported product, was based on the rate of exchange 14 days prior to the closing date as mentioned above.

**8 STANDARD SYSTEM OF MEASUREMENT WHERE BILLS OF QUANTITIES FORM PART OF THE TENDER DOCUMENTS**

The work executed under this Contract has been measured in accordance with the;

**Standard System of Measuring Builders Work (7th Edition)**

including all amendments unless descriptions of items indicate a deviation and it shall be understood that the system of measurement which is herein adopted is the only system of measurement which will be recognised in connection with this contract. Any contradictions to this system of measurement contained in the “Model Preambles for Trades 2008” shall be disregarded (unless same have been accommodated in the system of measurement) but applicable rates shall be included for all requirements stated and not measured separately in compliance with this system.

**9 PRICING OF ROCK EXCAVATIONS**

It is a condition of this tender that should the tenderer elect to price the Rock Excavation included in this tender, the rates must be market related and should be identically priced for the same classification of excavations and not vary for similar billed items in the different sections.

**10 REGISTRATION ON THE CENTRAL SUPPLIERS DATABASE**

1. In terms of the Public Finance Management Act (PFMA), 1999 (Act No 1 of 1999) Section 38 (1) (a) (iii) and 51 (1) (iii) and Section 76 (4) of PFMA National Treasury developed a single platform, The Central Supplier Database (CSD) for the registration of prospective suppliers including the varification functionality of key supplier information.
2. Prospective suppliers will be able to self - register on the CSD website: www.csd.gov.za
3. Once the supplier information has been varified with external data sources by National Treasury a unique supplier number and security code will be allocated and communicated to the supplier. Suppliers will be required to keep their data updated regularly and should confirm at least once a year that their data is still current and updated.
4. Suppliers can provide their CSD supplier number and unique security code to organs of state to view their varified CSD information.

5 Tenderers are required to fill in clearly, legibly, in bold print and black ink their CSD supplier number in the space hereunder:

| | |
|---|---|
| **Name of Supplier** | |
| **Central Supplier Database (CSD) Supplier Number:** | |

**12 TAX CLEARANCE REQUIREMENTS**

**It is a condition of tender that the taxes of the successful tenderer must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the Tenderder's tax obligations. It is a condition of this Offer of Commission that your practice remains in good standing with SARS (South African Revenue Services) in terms of its tax clearance, during the project, which is required to process your payment certificates.**

1 In order to meet this requirement tenderers are required to apply via e-filing at any SARS branch office nationally. The Tax Complance Status (TCS) requirements are also applicable to foreign Tenderders / individuals who wish to submit Tenders.

2 SARS will then furnish the Tenderder with a Tax Compliance Status (TCS) PIN that will be valid for a period of 1 (one) year from the date of approval.

3 In tenders where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Compliance Status (TCS) PIN.

4 Application for Tax Compliance Status (TCS) PIN can be done via e-filing at any SARS branch office nationally or on the website www.sars.gov.za.

5 Tax Clearance Certificates may be printed via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

6 Tax Clearance Certificates may be printed via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

| | |
|---|---|
| **Security PIN Number** | |
| **Company / Entity Tax Reference Number** | |

**13 BILLS OF QUANTITIES/LUMP SUM DOCUMENT**

The Bills of Quantities document forms part of and must be read and priced in conjunction with all the other documents forming part of the contract documents, the Standard Conditions of Tender, Conditions of Contract, Standard Preambles to all Trades, Specifications, Drawings and all other relevant documentation.

| | |
|---|---|
| **14** | **VALUE ADDED TAX**<br><br>The tender price must include for Value Added Tax (VAT). All rates, provisional sums, etc. in the Bills of Quantities must however be net (exclusive of VAT) with VAT calculated and added to the Total Value thereof in the Final Summary. |
| **15** | **FIXED PRICE CONTRACT**<br><br>Should the Bills of Quantities/Lump Sum Document be a fixed price contract, the following clause must be inserted in the Pricing Instructions:<br><br>Tenderers are to take note that the contract price adjustments are not applicable to this contract. Tenderers should therefore make provision in the Contract Sum, schedule of rates, etc. for possible price increases during the contract period, as no claims in this regard shall be entertained. |

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# C2.2 - Preliminaries for GCC for Construction works - 2nd Edition 2010

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

**BILL NO. 1**
**C2 .2 PRELIMINARY AND GENERAL**

| | NOTES | UNIT | QUANTITY | RATE | AMOUNT |
|---|---|---|---|---|---|
| **i)** | The agreement is to be the General Conditions of Contract for Works of Civil Engineering Construction (2010) (Second Edition) , published by the S. A. Institution Of Civil Engineering. | | | | |
| **ii)** | The Preliminaries are to be the Construction and management requirements for works contracts - Part 1: General engineering and construction works (SANS 1921-1: 2004 Edition 1) prepared by Standards South Africa and shall be deemed to be incorporated herein. | | | | |
| **iii)** | Tenderers are referred to the abovementioned documents for the full intent and meaning of each clause thereof (hereinafter referred to by heading and clause number only) for which such allowance must be made as may be considered necessary. | | | | |
| **iv)** | Where standard clauses or alternatives are not entirely applicable to this contract such modifications, corrections or supplements as will apply are given under each relevant clause heading. | | | | |
| **v)** | Where any item is not relevant to this specific contract such item is marked N/A (signifying "not applicable"). | | | | |
| **vi)** | Adjustment of the preliminaries: each item priced, is to be allocated to one or more of the three categories, where "F" denotes a fixed amount (amount not to be varied), "V" denotes an amount variable in proportion to value and "T" denotes an amount in proportion to time. | | | | |
| **vii)** | Time (T) related Preliminaries will only be adjusted for omissions or additions, issued by the Employer, or delays caused by the Employer, for which variation and extension of time has been granted. ***See Contract Data*** . | | | | |
| | **SECTION A: GENERAL CONDITIONS OF CONTRACT** | | | | |
| **A1** | General (clause 1)<br>F:..... V:..... T:..... | Item | | | |
| **A2** | Basis of Contract (clause 2)<br>F:..... V:..... T:..... | Item | | | |
| **A3** | Engineer (clause 3)<br>F:..... V:..... T:..... | Item | | | |
| **A4** | Contractor's General Obligation (clause 4)<br>F:..... V:..... T:..... | Item | | | |
| **A5** | Time and Related Matters (clause 5) - As referred to in the Contract Data under Special Condition of Contract.<br>F:..... V:..... T:..... | Item | | | |
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| **A6** | Payment and Related Matters (clause 6) | Item | | | |
| | F:..... V:..... T:..... | | | | |
| **A7** | Quality and Related Matters (clause 7) | Item | | | |
| | F:..... V:..... T:..... | | | | |
| **A8** | Risk and Related Matters (clause 8) | Item | | | |
| | F:..... V:..... T:..... | | | | |
| **A9** | Termination of Contract (clause 9) | Item | | | |
| | F:..... V:..... T:..... | | | | |
| **A10** | Claims and Disputes (clause 10) | Item | | | |
| | F:..... V:..... T:..... | | | | |
| | **SECTION B: SANS 1921-1:2004 (Edition 1): CONSTRUCTION AND MANAGEMENT REQUIREMENTS FOR WORKS CONTRACTS: PART 1** | | | | |
| | **Refer to the SCOPE OF WORK for detail requirements:** | | | | |
| B1 | Scope | | | | |
| | F:..... V:..... T:..... | Item | | | |
| B2 | Normative references | | | | |
| | F:..... V:..... T:..... | Item | | | |
| B3 | Definitions | | | | |
| | F:..... V:..... T:..... | Item | | | |
| B4 | Requirements for construction and management | | | | |
| | F:..... V:..... T:..... | Item | | | |
| B4.1 | General | | | | |
| | F:..... V:..... T:..... | Item | | | |
| B4.2 | Responsibilities for design and construction | | | | |
| | F:..... V:..... T:..... | Item | | | |
| B4.3 | Planning, programme and method statements | | | | |
| | F:..... V:..... T:..... | Item | | | |
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| B4.4 | Quality assurance<br>F:..... V:..... T:..... | Item | | | |
| B4.5 | Setting out<br>F:..... V:..... T:..... | Item | | | |
| B4.6 | Management and disposal of water<br>F:..... V:..... T:..... | Item | | | |
| B4.7 | Blasting<br>F:..... V:..... T:..... | Item | | | |
| B4.8 | Works adjacent to services and structures<br>F:..... V:..... T:..... | Item | | | |
| B4.9 | Management of the Works and site<br>F:..... V:..... T:..... | Item | | | |
| B4.10 | Earthworks<br>F:..... V:..... T:..... | Item | | | |
| B4.11 | Testing<br>F:..... V:..... T:..... | Item | | | |
| B4.12 | Materials, samples and fabrication drawings<br>F:..... V:..... T:..... | Item | | | |
| B4.13 | Equipment<br>F:..... V:..... T:..... | Item | | | |
| B4.14 | Site establishment<br>F:..... V:..... T:..... | Item | | | |
| B4.15 | Survey control<br>F:..... V:..... T:..... | Item | | | |
| B4.16 | Temporary works<br>F:..... V:..... T:..... | Item | | | |
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| B4.17 | Existing services<br>F:..... V:..... T:..... | Item | | | |
| B4.18 | Health and safety<br>F:..... V:..... T:..... | Item | | | |
| B4.19 | Environmental requirements<br>F:..... V:..... T:..... | Item | | | |
| B4.20 | Alterations, additions, extensions and modifications to existing works<br>F:..... V:..... T:..... | Item | | | |
| B4.21 | Inspection of adjoining structures, services, buildings and property<br>F:..... V:..... T:..... | Item | | | |
| B4.22 | Attendance on nominated and selected subcontractors<br>F:..... V:..... T:..... | Item | | | |
| | **SECTION C: SCOPE OF WORK in accordance with SANS 10403**<br>*(The reference to Clauses refer to Table B.1 of SANS 1921-1:2004)* | | | | |
| C1 | Certification by recognised bodies - CLAUSE 4.4<br>F:..... V:..... T:..... | Item | | | |
| C2 | Agrément certificates - CLAUSE 4.5<br>F:..... V:..... T:..... | N/A | | | |
| C3 | Other services and facilities - CLAUSE 4.8<br>F:..... V:..... T:..... | Item | | | |
| C4 | Recording of weather - CLAUSE 5.2<br>F:..... V:..... T:..... | Item | | | |
| C5 | Management meetings - CLAUSE 5.3<br>F:..... V:..... T:..... | Item | | | |
| C6 | Daily records CLAUSE 5.6<br>F:..... V:..... T:..... | Item | | | |
| C7 | Bond and guarantees - CLAUSE 5.7<br>F:..... V:..... T:..... | Item | | | |
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| C8 | Permits - CLAUSE 5.9<br>F:..... V:..... T:..... | Item | | | |
| C9 | Proof of compliance with the law - CLAUSE 5.10<br>F:..... V:..... T:..... | Item | | | |
| | **SECTION D: SPECIFICATION DATA ASSOCIATED WITH SANS 1921-1:2004 (Table A.1)** | | | | |
| D1 | Requirements for drawings, information and calculations for which the contractor is responsible CLAUSE 4.1.7<br>F:..... V:..... T:..... | Item | | | |
| D2 | The responsibility strategy assigned to the contractor for the works CLAUSE 4.2.1<br>F:..... V:..... T:..... | Item | | | |
| D3 | The planning, programme and method statements - CLAUSE 4.3<br>F:..... V:..... T:..... | Item | | | |
| D4 | Samples of materials, workmanship and finishes - CLAUSE 4.12.1<br>F:..... V:..... T:..... | Item | | | |
| D5 | Fabrication drawings that the contractor is to provide and deliver to the employer - CLAUSE 4.12.2<br>F:..... V:..... T:..... | Item | | | |
| D6 | Office for the foreman CLAUSE 4.14.3<br>F:..... V:..... T:..... | Item | | | |
| D7 | Telephone - CLAUSE 4.14.3<br>F:..... V:..... T:..... | Item | | | |
| D8 | Office for inspector of works - CLAUSE 4.14.3<br>F:..... V:..... T:..... | Item | | | |
| D9 | Telephone in office for inspector of works - CLAUSE 4.14.3<br>F:..... V:..... T:..... | Item | | | |
| D10 | Sheds - CLAUSE 4.14.3<br>F:..... V:..... T:..... | Item | | | |
| | Carried forward to collection | | | R | |

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| D11 | Provision and erection of signboards - CLAUSE 4.14.6<br>F:..... V:..... T:..... | Item | | | |
| D12 | Termination, diversion or maintenance of existing services - CLAUSE4.17.1<br>F:..... V:..... T:..... | Item | | | |
| D13 | Services which are known to exist - CLAUSE 4.17.3<br>F:..... V:..... T:..... | Item | | | |
| D14 | Detection apparatus - CLAUSE 4.17.4<br>F:..... V:..... T:..... | Item | | | |
| D15 | Additional health and safety requirements - CLAUSE 4.18<br>F:..... V:..... T:..... | Item | | | |
| | **SECTION E: SPECIFIC PRELIMINARIES**<br>Section E contains Specific Preliminary items which apply to this contract except where "N/A" (Not Applicable) appears against the item. | | | | |
| E1 | **PROPRIETARY BRANDED PRODUCTS**<br>The contractor shall take delivery of, handle, store, use apply and/or fix all proprietary branded products in strict accordance with the manufacturers' instruction after consultation with the manufacturer's authorised representative.<br>F:..... V:..... T:..... | Item | | | |
| E2 | **OVERTIME**<br>Should overtime be required to be worked for any reason whatsoever, the costs of such overtime are to be borne by the Contractor unless the Engineer/Principal Agent has specifically authorised in writing, prior to the execution thereof, that costs for such overtime are to be borne by the Employer.<br>F:..... V:..... T:..... | Item | | | |
| E3 | **AS BUILT DRAWINGS**<br>The position of construction breaks and the extent of individual concrete pours are to be recorded by the Contractor on the Structural Engineer's drawings and are to be submitted to the Engineer/Principal Agent and the Structural Engineer for their records.<br>F:..... V:..... T:..... | Item | | | |
| | Carried forward to collection | | | R | |

| | SECTION E: SPECIFIC PRELIMINARIES | UNIT | QUANTITY | RATE | AMOUNT |
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| E4 | **SITE INSTRUCTIONS**<br><br>Site Instructions issued on site are to be recorded in triplicate in a Site Instruction book which is to be maintained on site by the Contractor.<br><br>F:..... V:..... T:..... | Item | | | |
| E5 | **LABOUR RECORD**<br><br>At the end of each week the Contractor shall provide the Engineer/Principal Agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all sub-contractors on the works each day.<br><br>F:..... V:..... T:.....<br><br>*<u>Note</u> : In the event that the contractor fails to satisfy the requirements of this specification, the Employer (Head: Health) may apply any of the sanctions provided in the contract. Sanctions may include the application of a financial penalty of 0.04% of the Contract Sum per calendar day of which the required report has not been submitted.* | Item | | | |
| E6 | **PLANT RECORD**<br><br>At the end of each week the Contractor shall provide the Engineer/Principal Agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used on the works.<br><br>F:..... V:..... T:..... | Item | | | |
| E7 | **NON CESSION OF MONIES**<br><br>The Contractor shall not cede nor assign his rights or claims to any monies due or to become due under this contract.<br><br>F:..... V:..... T:..... | Item | | | |
| E8 | **SECTIONAL COMPLETION**<br><br>When it is required that the contract be executed in sections or portions, the tenderer shall allow for all costs in this regard as no claim for additional costs will be entertained.<br><br>F:..... V:..... T:..... | Item | | | |
| E9 | **LOCAL LABOUR**<br><br>It is a general requirement of this contract that persons normally resident in the locality of the works (Local Labour) be given preference for employment on the contract. Provided, however, that should adequate and appropriate Labour not be available within the locality, others may be employed subject to satisfactory proof being provided that every reasonable endeavour has been made to employ Local Labour. The Contractor shall identify the local community leaders with the purpose of negotiating with them regarding the utilization of Local Labour in the construction process. In this regard, the Contractor shall furthermore give preference, wherever possible to the employment of single heads of households, women and youth. The Contractor shall, in general, maximize the involvement of the local community.<br><br>F:..... V:..... T:..... | Item | | | |
| | Carried forward to collection | | | R | |

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| E10 | **IMPORT PERMITS AND DUTIES**<br>The responsibility for obtaining the necessary import permits shall rest with the successful Tenderer. No foreign exchange will be arranged or provided by the Administration.<br>Tenderers are to allow in their tenders and pay the ordinary levy imposed on imported items in terms of item 196.10 of Part 8 of Schedule No. 1 of the Customs and Excise Act, 1964 with effect from 1 October 1989.<br>F:..... V:..... T:..... | Item | | | |
| E11 | **CONTRACT PRICE ADJUSTMENT PROVISIONS (CPAP)**<br>Notwithstanding anything to the contrary contained in the GCC for Construction Works 2010 2nd Edition, this Contract is not subject to any Contract Price Adjusment Provisions (CPAP) | | | | |
| E12 | **EPWP CONDITIONS AND SPECIFICATIONS**<br>**12.1 EMPLOYMENT TARGETS**<br><u>E12.1 a Employment Targets</u><br>The contractor needs to provide a realistic estimate on the number of jobs that the project has the potential to create throughout the project duration as the project will be implemented using labour intensive construction methods on elements where it is economical and feasible for this construction method.<br>No of jobs to be created = ……. *[Contractor to fill in an estimated number]*<br>F:..... V:..... T:..... | Item | | | |
| | <u>E12.1 b Employment requirements</u><br>Tenderers are advised that this contract will be subject to the Expanded Public Works Program (EPWP) aimed at alleviating and reducing unemployment.<br>Tenderers must allow for any costs for the employement of unskilled labour as per the requirements of the EPWP program;<br>1. 55% of unskilled labour to be women<br>2. 55% of unskilled labour to be youth aged between 18 and 35 years<br>3. 2% of unskilled labour to be people living with disability<br>4. 100% Unskilled labour utilised must reside within the boundries of the Municipality Ward where this contract is executed, with preference to the local community closest or at the walking distance to the contract site. Wherever possible local skilled tradesmen are to be employed on this contract with the view to maximize utilization of local resources.<br>F:..... V:..... T:..... | Item | | | |
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| | E12.1 c Labour rate and payment intervals<br>The contractor should ensure that labour rate paid to unskilled local labour is commensurate to the daily task. When determining the rate, consideration should be given to that EPWP beneficiaries are mostly bread winners in their families, as the program intends alleviating poverty. There should also be consideration that the labour rate promotes creation of expanded number of jobs created and person days of work.<br>Contractors should make endeavours to ensure that labourers, particularly unskilled are remunerated on fortnight basis and prior notification be made should there be a shortfall on their wages.<br>The labour rate for local unskilled shall also be determined in consideration of the location of the project, i.e. for projects implemented in urbanized municipalities will not be the same as that for rural municipalities.<br><br>F:..... V:..... T:..... | Item | | | |
| | **12.2 LABOUR INTENSIVE CONSTRUCTION METHOD**<br>E12.2 a Labour Intensive Construction (LIC) method<br>On site there must a person(s) having competency in managing and implementing LIC methods.<br>*Foreman @ NQF Level 4 the Unit Standard on Implementing LIC methods on site.<br>*Site Agent/ Managers @ NQF level 5 the Unit Standard on Manage Labour-Intensive Skills Programme both must be CETA accredited<br><br>F:..... V:..... T:..... | Item | | | |
| | E12.2 b Labour Intensive Construction Method<br>Those parts of the contract to be constructed using Labour Intensive methods will be marked in the BoQ with letter LI (indicating Labour Intensive) against every item so designated. Such works will only be constructed using method so indicated.<br><br>Reference to be made to Guidelines for the implementation of Labour Intensive Infrastructure projects under EPWP. "Scope of Work in Respect of Work Relating to the Expanded Public Works Programme (EPWP)"<br><br>F:..... V:..... T:..... | Item | | | |
| | **E12.3 RECORD KEEPING**<br>12.3.1 Every employer must keep in the project site office the following minutes of site progress minutes; contractors' monthly site progress reports; accurately recorded attendance register; proof of payment as means to verify authenticity of data in the EPWP Beneficiary form submitted with payment certificates. Copies of submitted EPWP beneficiary data forms should also be kept in the site office.<br><br>F:..... V:..... T:..... | Item | | | |
| | 12.3.2 The employer must keep this record for a period of at least three (3) years after the completion of the project in his/her office as the project site office would have been relocated.<br><br>This should be safely kept for job creation data verifications and periodical audits on projects conducted by National and Provincial Department of Public Works after one (1) or two (2) quarters of submitting captured EPWP Data to the National EPWP coordinating Department.<br><br>F:..... V:..... T:..... | Item | | | |
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| | **E12.4 EPWP REPORTING as per EPWP DATA FORM**<br>At the end of each month as part of site progress report and to be attached to every contractors' progress payment certificate; the contractor shall provide the principal agent & Public Works with a written records, as per EPWP data form; which will be reflecting, beneficiaries full name & surname; ID No and job description of labour employed by main contractor and sub-contractors on site.<br>At the end of each month the contractor must submit the following documents to be attached to the Progress payment certificate:<br>1. EPWP monthly data collection form<br>2. Worker monthly payment upload<br>3. Worker monthly proof of payment i.e<br>3.1 Acknowledgement of receipt of payment or<br>3.2 Payslips<br>3.3 Bank statement highlighted the workers paid<br>4. Worker monthly training form<br>5. Monthly attendance register<br>6. Certified copies of ID's (once off)<br>7. ID size photos (once off)<br>8. Proof of UIF<br>9. Proof of COIDA<br><br>F:..... V:..... T:..... | Item | | | |
| | **E12.5 EPWP PROMOTION**<br><u>12.5.1 EPWP signage board</u><br>EPWP Program at the project level shall always be promoted through have the projects signage board that embrace EPWP logo at the bottom, correct measurement for this signage board will be provided by the project leader during the site handing over meeting. the standard "HELVETIVA MEDUIM " letters are to be used . Professional title to be 10 mm above line . Line thickness to be 8 mm thick . Space between bottom of the line and bottom of the lettering below the line has to be 100 mm. Letter sizes are as follows : Helvetica meduim 100 mm black upper case to be for project name and owner . Helvetica meduim 75mm black upper case only to be used for professional titles.Project name and owner shall be black lettering on white background.board sizes are as follows : Board to be minomum 2000mm from ground level and to be constructed from reinforced formed chromadek panels minimum 0,6mm thick chromadek. The contractor is responsible for ensuring that the project board remains neatly and safely erected for the full duration including maintenance period,after which the project board and post are to be dismantled and handed to the client in good order.<br><br>F:..... V:..... T:..... | Item | | | |
| | <u>12.5.2 Branding of labour apparel</u><br>Contractor & Sub-contractors' labourers shall be provided with EPWP branded Personal Protective Equipment (PPE), reflector vest with EPWP wording at the back is an ideal and cost effective means of promoting program on site.<br><br>The contractor is then advised to price for both item 17.5.1 and 17.5.2<br><br>F:..... V:..... T:..... | Item | | | |
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| | **E12.6 COMMUNITY LIAISON OFFICER (CLO)**<br>UTILISATION OF A COMMUNITY LIAISON OFFICER<br>In addition to the requirements of Clause E9, contained in this document;<br>The Contractor shall allow for and pay any and all costs necessary for the engagement of the services of a Community Liaison Officer (CLO) for the full duration of this contract<br>In the interest of providing a sound service to both the community and the Contractor, a CLO may only manage one project at a given time.<br>A CLO will be identified by the local structures of the ward areas and appointed following fair and transparent interviewing process, to be conducted in the presence of local structures and the contractor representative, in order to assist the Contractor in the procurement of any local labour, etc. required for this project. The Contractor is to liaise with the CLO and afford him any assistance needed in ensuring sound working relations with the local community.<br>**Key Responsibilities of the CLO are envisaged to include and not necessary be limited to:**<br>1. Assisting local leadership in conducting skills and resources audit which facilitates sourcing labour from within the ward or targeted areas for employment, as required by contractor.<br>2. Assisting in sourcing labour-only domestic sub-contractors and the procurement of materials from local resources, as required by the contractor.<br>3. Assisting the contractor by identifying areas of potential conflict and or threats to the project or to stakeholders in the project and recommend appropriate action to the contractor.<br>4. Assisting contractor and stakeholders in the project in the resolution of any conflict which may arise.<br>5. Establishing and ensuring that sufficient and open communication channels between the contractor and the work force are maintained.<br>6. Establish and ensuring that efficient and open communication channels between the contractor and the community are maintained<br>7. Identifying and reporting to the Contractor regarding issues where communication between stakeholder is necessary, recommend courses of action and facilitate such communications | | | | |
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| | 8. Assisting the Contractor and the work force in the establishment of grievance procedures and necessary recommenda-tion to the Contractor regarding the grievances and solution thereto.<br><br>9. Attending to site meetings and project implementation meetings as required by the Contractor and prepare periodic reports as may be required by the Contractor from time to time.<br><br>10. Attending to such other duties which are consistent with the functions of a CLO, as may be required by the Contractor from time to time.<br><br>Tenderers are to price twice the rate of unskilled local labour rate against this item for any and all costs arising out of compliance with the foregoing and in the event of a Tenderer failing to price against this item or making inadequate financial provision against this item for compliance as aforesaid, then no claim for costs or additional cost incurred will be entertained by the Head: Works<br><br>F:..... V:..... T:..... | Item | | | |
| | **E12.7 SKILLS DEVELOPMENT ON SITE**<br>Contractor in conforming to the object of EPWP that its beneficiaries need to be capacitated with skills that will render them employable in the future. It is then the responsibility of the Contractor that mandatory life skills are provided to 100% of workforce on site and on the job training to labourers from whom the potential for further development has been identified. The latter is not mandatory to all as it covers technical skills.<br><br>Contractor should also make provision for the possibility that there might be local youth that will need to be placed on the project with an intention to be provided support towards improving their level of competency and productivity.<br><br>Contractor shall also provide all necessary on-the-job training to targeted labour to enable such labour to master and advance on techniques required to undertake the work in accordance with requirements of the contract in a manner that does not compromise workers health and safety.<br><br>F:..... V:..... T:..... | Item | | | |
| | **E12.8 LABOUR ONLY Sub Contracting for local emerging enterprises**<br>Tenderer's are advised that this contract is subject to the Expanded Public Works Programme (EPWP) and the following criteria will apply:<br><br><u>African Equity Ownership</u><br>a) The Tenderer is to allow for 5% of the total value of works to be undertaken by a Priority Population Group. This percentage excludes the costs of employing local unskilled labour. The allocation of this percentage from the Project, the screening of people, the selection of skills, will be for the Contractor to adjudicate.<br>b) The Priority Population Group consists of women, youth and disabled people.<br>c) The Contractor is to give first option for prospective PPG's from the surrounding areas of the Project. Should there be insufficient suitable people fitting the criteria of PPG's, the Contractor may hire people from further afield. This is to be done only after consultation with the Department of Works EPWP Co-ordinator and the Community Liaison Officer (CLO).<br><br>d) A Mentor is to be employed by the Contractor, in consultation with the Department of Works for the purposes of quality control and liaison between the Contractor and the selected PPG's on site. The mentor will be responsible for ensuring an acceptable level of quality workmanship and that such work carried out by the PPG's is executed within the time frames stipulated.<br><br>In so far as possible, the Contractor is encouraged to expand the PPG's skills, knowledge and performance levels.<br><br>F:..... V:..... T:..... | Item | | | |
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| | TENDERER'S TO NOTE CONDITIONS<br>a) The contract to be entered into between the Contractor and the PPG's will be a LABOUR ONLY sub-contract.<br>b) The Contractor will be responsible for ensuring that all materials for use by the PPG's in the works are to be on site timeously. The Contractor shall liaise with The Mentor and PPG to determine the nature and extent of materials required and the lead time necessary.<br>c) The Contractor shall be responsible for the overall programming of the Works and he is to allow for monitoring the PPG's programme and progress.<br>d) In conjunction with the Mentor, he is to allow for the supervision and mentoring (where necessary) of the PPG to ensure quality and adherence to standard building practice<br>e) The Contractor is to allow for extra storage facilities on site for the PPG's tools and equipment.<br>f) Basic tools shall be provided by the PPG's and where these are not available; the Contractor will supply him with the necessary tools and equipment and deduct the costs thereof from the interim claims made by the PPG.<br>g) Work requiring specialized tools will be provided free of chargeby the Contractor with the provision that these be returned upon completion of the Work.<br>CO-ORDINATION<br>The Contractor is to co-ordinate the work of all the PPG's, Sub-Contractors and Nominated Sub- Contractors appointed direct by the Employer in such a manner and at all times as will suit the building programme and he is to allow adequate access, for the PPG's, where required, to carry out their work in an efficient manner as no claims for extras in this connection will be entertained.<br>F:..... V:..... T:..... | Item | | | |
| | ATTENDANCE<br>The Contractor may allow for attendance upon the PPG's concerned to execute the work. The Contractor is to allow the PPG's the use of any scaffolding belonging to him while it remains so erected on the site.<br>Where scaffolding is necessary for the use by any PPG and the Contractor has not erected any for his own use or has removed same after his own use, the Contractor shall supply sufficient scaffolding to the PPG to be erected and dismantled by the PPG and returned to the Contractor.<br>This attendance upon PPG's to execute the work is to include for the scaffolding provisions as aforesaid and, in addition, is to include for co-operating to the fullest extent with all the parties, attending on off-loading materials, providing suitable storage for tools and materials used by the PPG's, use of general facilities such as latrines, etc., supply and cost of power, lighting, water and the like.<br>F:..... V:..... T:..... | Item | | | |
| | **E12.9 EPWP CONTRACT FOR LABOUR**<br>It is compulsory that shortly after the contractor and or sub contractor has appointed local labour, the employment contract should be signed by both parties, prior to commencement with works on site. The employment contract forms part of the Ministerial Determination or from the regional EPWP officials. Each contract will lapse at the end of each financial year therefore requiring the Contractor to do a renewal of each contract should the need of employment still exist for that particular labourer.<br>F:..... V:..... T:..... | | | | |
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| | | UNIT | QUANTITY | RATE | AMOUNT |
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| | **E12.10 EPWP SCOPE of WORK**<br>**Note:**<br>Contractors are to price any item on the Bill of Quantities having below, bearing in mind that they are regarded as main sources of job creation, whether sub contracted or undertaken by the main contractor.<br><br>Elements on the scope of work where application of Labour Intensive Construction methods as will indicated with letters (LI) are regarded feasible are as follows;<br>i) Excavating trenches for foundations and any other civil works with the depth not more than 1.5 m<br>ii) All masonry works which include concrete mixing on site; brickwork; plastering; screed works; jointing; etc.<br>iii) Painting, Plumbing, Ironmongery; roof cladding; glazing; tilling; carpentry; flooring; waterproofing; etc.<br>F:..... V:..... T:..... | Item | | | |
| | **Note:**<br>It is a general requirement of this contract that persons normally resident in the ward of the works (local labour) be given preference for employment on the contract. Provided, however, that should adequate and appropriate labour not be available within the ward, others may be employed subject to satisfactory proof being provided that every reasonable endeavour has been made to employ local labour (Local Sub-contractor(s); Skilled; Semi-Skilled and Unskilled). The contractor shall in consultation with the local community leaders with the purpose of negotiating with them regarding the utilization of local resources in the construction process. In this regard, the contractor shall furthermore give preference, wherever possible to the employment of single heads of households, women and youth as well as families declared as most indigent by War on Poverty/ Sukuma Sakhe program profiling process. The contractor should aim, in general, to maximise the involvement of the local community, however workers from other communities should not exceed 20% of all persons working on the project, where local employees possess skills at level of competency that meet contractors requirements.<br><br><u>Payment for the labour-intensive component of the works</u><br>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.<br><br><u>Linkage of payment for labour-intensive component of works to submission of project data</u><br>The Contractor's payment invoices shall be accompanied by labour information for the corresponding period in a format specified by the employer. If the contractor chooses to delay submitting payment invoices, labour returns shall still be submitted as per frequency and timeframe stipulated by the Employer. The contractor's invoices shall not be paid until all pending labour information has been submitted.<br><br><u>Applicable labour laws</u><br>The current Ministerial Determination (also downloadable at <u>www.epwp.gov.za</u>) Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice , shall apply to works described in the scope of work as being labour-intensive and which are undertaken by unskilled or semi-skilled workers.<br><br>F:..... V:..... T:..... | Item | | | |
| | Carried forward to collection | | | R | |

| | | UNIT | QUANTITY | RATE | AMOUNT |
|---|---|---|---|---|---|
| E13 | **HIV/AIDS AWARENESS**<br>Tenderers are to price against the following items for compliance with the SPECIFICATION FOR HIV/AIDS AWARENESS bound into this document (The clauses referred to are those of the Specification for HIV/AIDS) | | | | |
| E13.1 | Provide and maintain a condom dispenser in terms of Clause 5.1a)<br><br>F:..... V:..... T:..... | Item | | | |
| E13.2 | Provide and maintain HIV/AIDS awareness posters terms of Clause 5.1b)<br><br>F:..... V:..... T:..... | Item | | | |
| E13.3 | HIV /Aids Awareness Programme on Site for not less than 90% of workers inclusive of all direct and indirect costs;<br><br>Engage a qualified service provider as described in the scope of works to conduct an HIV Awareness Programme in terms of Clause 5.2.1a)<br><br>F:..... V:..... T:..... | Item | | | |
| E13.4 | Arrange for workers to attend the HIV Awareness Programme in terms of Clause 5.2.1b)<br><br>F:..... V:..... T:..... | Item | | | |
| E13.5 | **Reporting**<br>Prepare and attach to claims for payment a brief report in terms of Clause 5.3 (see also HIV/STI Compliance Report included with this document).<br><br>F:..... V:..... T:.....<br>***Note: In the event that the contractor fails to satisfy the requirements of this specification, the employer (Head: Health) may apply any of the sanctions provided for in the contract. Sanctions may include the application of a financial penalty of 0.04% of the Contract Sum per calendar day of which the required reports has not been submitted.*** | Item | | | |
| E14 | **OCCUPATIONAL HEALTH AND SAFETY ACT NO. 85 OF 1993**<br>Tenderers are to allow for costs in providing a project specific ' Construction Phase Safety, Health and Environmental Plan' in accordance with "Section 2 - Specification Data associated with SANS 1921-1:2004" clause C4.18 in "Part C3 - Scope of Work"<br><br>F:..... V:..... T:..... | Item | | | |
| E15 | **NOTICE BOARD, SITE OFFICE, ETC.**<br>Bidders are to allow for the provision and removal of a project notice board and a site office in accordance with the Principal Agent's requirements.<br><br>F:..... V:..... T:..... | Item | | | |
| E16 | **IMPORTED MATERIALS AND EQUIPMENT**<br>Where imported items are listed in the tender documents, the tenderer shall provide all information called for, failing which the price of any such item, material or equipment shall be excluded from currency fluctuations. (***Refer to T2.14 - Schedule of Imported Materials and Equipment*** .<br><br>F:..... V:..... T:..... | Item | | | |
| E17 | **CONTRACT DOCUMENTS**<br>The drawings issues with these Bid documents do not comprise the complete set but serves as a guide only for Biding purposes and for indicating the scope of works to enable the Bidder to acquaint him with the nature and extent of the works and the manner in which they are to be executed.<br><br>Should any part of the drawings not be clearly legible to the Bidder he shall, before submitting his Bid, obtain clarification in writing from the principal agent.<br><br>F:..... V:..... T:..... | Item | | | |
| | Carried forward to collection | | | R | |

| | | UNIT | QUANTITY | RATE | AMOUNT |
|---|---|---|---|---|---|
| E18 | **GENERAL PREAMBLES**<br>The Document Preambles will be the DOH Supplementary Preambles January 2009 Rev.3 and shall be read in conjunction with the Bills of Quantities and be referred to for the full descriptions of work to be done and materials to be used. | | | | |
| | F:..... V:..... T:..... | Item | | | |
| E19 | **TRADE NAMES**<br>Wherever a Trade Name for any product has been described in the Bills of Quantities the Bidder's attention is drawn to the fact that any other product of equal quality may be used subject to the written approval of the Principal Agent being obtained prior to the closing date for submission of Bids. | | | | |
| | F:..... V:..... T:..... | Item | | | |
| E20 | **EXISTING PREMISES OCCUPIED**<br>Refer to Scope of Works Part C3 of this Bid Document for information on the occupation of existing buildings. | | | | |
| | F:..... V:..... T:..... | Item | | | |
| E21 | **INACCURATE AND DEFECTIVE WORK EXECUTED UNDER PREVIOUS CONTRACT**<br>The contractor shall, after taking possession of the site and before commencing the work, check all levels, liners, profiles and the like and satisfy himself as to the dimensional accuracy of all work executed under the previous contract which may affect his work.<br><br>Should any inaccurate or defective work be found, the contractor shall immediately notify the principal agent in writing requesting his instructions with regard thereto and afford every facility to those rectifying such inaccurate or defective work. | | | | |
| | F:..... V:..... T:..... | Item | | | |
| E22 | **VIEWING THE SITE IN SECURITY AREAS**<br>If the site is situated in a security area and the Bidder must arrange with the Authorities to obtain permission to enter the site for Bidding purposes. | | | | |
| | F:..... V:..... T:..... | Item | | | |
| E23 | **COMMENCEMENT OF WORKS IN SECURITY AREAS**<br>If the works falls within a security area, the contractor must arrange with the Authorities and give the necessary notices before commencement of the works. Should the contractor fail to make such arrangements, admission to the site may be refused and any additional costs will be for the contractor's account. | | | | |
| | F:..... V:..... T:..... | Item | | | |
| E24 | **ENTRANCE PERMITS TO SECURITY AREAS**<br>If the works fall within a security area, the contractor shall obtain entrance permits for his personnel and workmen entering the area and shall comply with all regulations and instructions which may be issued from time to time regarding the protection of persons and property under control of the Authority. | | | | |
| | F:..... V:..... T:..... | Item | | | |
| | Carried forward to collection | | | R | |

| | | UNIT | QUANTITY | RATE | AMOUNT |
|---|---|---|---|---|---|
| E25 | **SECURITY CHECK OF PERSONNEL**<br>The principal agent may require the contractor to have his personnel and workmen, or a certain number of them, security classified.<br><br>In the event of the principal agent requesting the removal of a person or persons from the works for security reasons, the contractor shall do so forthwith and shall thereafter ensure that such person or persons are denied access to the works and the site and/or to any document or information relating to the works.<br><br>F:..... V:..... T:..... | Item | | | |
| E26 | **PROHIBITION ON TAKING PHOTOGRAPHS**<br>In terms of article 119 of the Defence Act, 44 of 1957, it is prohibited to sketch or to take photographs of any military site or installation or any building or civil works thereon or to be in possession of a camera or other apparatus used for taking photographs, except when authorised thereto by or on behalf of the Minister.<br><br>The same prohibition is also applicable to all Correctional Institutions in terms of article 44.1(e) of the Correctional Services Act 8 of 1959.<br><br>F:..... V:..... T:..... | Item | | | |
| E27 | Management of Water Water for Construction purposes must be obtained from alternative water sources (i.e. supply other than water that is produced and distributed by a regulated water service authority from a licenced water treatment works for human consumption), eg dams, rivers, boreholes, springs, rainwater harvesting, recycled sewerage water,etc. The alternative water source shall not be of an inferior quality / standard than that required for construction purposes. The client reserves the rigfht through his agents to test such supplies or request certificates confirming the grade and nature of the water supply. Relevant knowledge of the respective area will be an advantage. | | | | |
| | Carried forward to collection | | | R | |

**SECTION 1**

SUMMARY – PRELIMINARY & GENERAL

| Collection | Page No. | Amount | |
|---|---|---|---|
| | 1 | R | |
| | 2 | R | |
| | 3 | R | |
| | 4 | R | |
| | 5 | R | |
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| | 7 | R | |
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| | 9 | R | |
| | 10 | R | |
| | 11 | R | |
| | 12 | R | |
| | 13 | R | |
| | 14 | R | |
| | 15 | R | |
| | 16 | R | |
| | 17 | R | |
| **Carried forward to Final Summary (C2.3.40)** | | R | |

Section No. 1
Preliminary & General
Summary

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# PART C2.3 BILL OF QUANTITIES

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

## BILL OF QUANTITIES

### PREAMBLE TO BILL OF QUANTITIES

**Items and Pricing**

The Department reserves the right to place an order for any quantities of items included in the Schedules. The Bill of Quantities must also not be assumed to include and describe every detail of the supply requirement, but must be taken and read in conjunction with the other parts of the document. Thus the supplier shall not have claim for further payment in respect of any order which may be described or implied in the contract, although apparently no corresponding items are given in the Bill of Quantities. The supplier shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the contract and of the rates and prices stated in the Bill of Quantities.

**Tax and Duties**

Prices, tendered and paid, must include all customs, excise and import duties, and any other tariffs or taxes levied by the government or statutory body having jurisdiction on the goods provided under this contract**, including Value Added Tax (applicable to the current rate).**

**Rates**

Except where provision is made in the Bill of Quantities, the rates and prices inserted shall be the full rates and prices for the service delivered described under the respective items and shall cover all labour, transport, overhead charges and profit, etc. as well as the general liabilities, obligations and risks arising out of the Conditions of Contract, the overhead charges and profit being spread proportionately over the rates of the relative items in the Bill of Quantities.

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

**C2 .3 BILLS OF QUANTITIES**

**The Quantities measured in the Bill are PROVISIONAL and are subject to remeasurement at completion of the works.**

| ITEM | DESCRIPTION | QTY | UNIT | RATE | TOTAL |
|---|---|---|---|---|---|
| | **SUPPLY DELIVER INSTALL & COMMISSION** | | | | |
| 2.3.1 | Supply, delivery to site a 250 kVA Prime 400/230-volt indoor type generator set, Including self bunded Base tank [3CR12] (<2000L as per Ann 10: 7.7.1). | 1 | Each | | |
| 2.3.2 | Installation and commissioning of a 250 kVA 400/230-volt indoor type generator set and base tank, including Deep Sea 7320 generator controller as specified. | 1 | Each | | |
| 2.3.3 | Supply & delivery of a **suitably rated** generator **LV Panel** panel (3CR12) as per Section 10 - Technical Specification for newly installed generator within the respective plant room. | 1 | Each | | |
| 2.3.4 | Installation and commissioning of a **suitably rated** generator **LV Panel** as per Section 10 - Technical Specification for newly installed generator within the respective plant room. | 1 | Each | | |
| 2.3.5 | Supply & delivery of a new **Control Panel (3CR12)** as per Section 10&11 - Technical Specification. (including Deep Sea 7320 generator controller as specified.) | 1 | Each | | |
| 2.3.6 | Installation and commissioning of a new **Control Panel** as per Section 10&11 - Technical Specification. very of a new **Control Panel** as per Section 11 - Technical Specification. (including Deep Sea 7320 generator controller as specified.) | 1 | Each | | |
| 2.3.7 | Supply, deliver, DSE WebNet DSE890 Gateway complete with a 1 x GPS antenna and 1 x GSM antenna installed in generator set in item 2.3.1, complete with a data SIM card. | 1 | Each | | |
| 2.3.8 | Install and commission DSE WebNet DSE890 Gateway complete with a 1 x GPS antenna and 1 x GSM antenna installed in generator set in item 3.1, complete with a data SIM card. | 1 | Each | | |
| 2.3.9 | The SIM card must be loaded with adequate data for this reporting module) with a minimum of 300GB of data | 1 | Each | | |
| 2.3.10 | Removal and decommissioning of existing 120kVA Rolls Royce Generator, day tank and LV & Control panel in existing generator plant room<br>o Existing LV Panel and peripheral/ancillary equipment, day-tank<br>o Exhaust & radiator extractor duct | | Item | | |
| 2.3.11 | Containerise 120kVA Rolls Royce as per DOH specifications and deliver to Wentworth Hospital Strategic Stores inlcuding day tank and Control Panel | | Item | | |
| | **CABLE WORKS** | | | | |
| 2.3.12 | Supply, deliver, install, test and commission<br>8 off 300mm2 single core, ECC, SWA, PVC insulated copper cables; ***Cables must be able to withstand no less than 450A/phase*** | 160 | m | | |
| 2.3.13 | Supply, deliver, install, test and commission<br>Single 2.5mm2, 7 core, ECC control cables. | 40 | m | | |
| 2.3.14 | Supply, deliver and install all terminations of existing cables using C.C.G or Pratley Glands and shrouds.<br><br>***Allow for all terminations of newly installed cables using C.C.G or Pratley Glands and shrouds.All terminations shall be done with the use of hydraulic crimping tools only.*** | 16 | Each | | |
| 2.3.15 | Supply, deliver, install and commission suitably rated earth mat/spike. Earth mat/spikes design must be included in engineers design report. | 1 | Item | | |
| 2.3.16 | Supply, delivery and installation of overhead and wall mounted heavy duty cable tray including all fixtures, covers and fittings between the generator and LV panel.<br>This includes the entire cable route:<br>- Cable route with galvanised trays/ladders, floor mounted steel trunking<br>- Underground Cable sleeves<br>- Suitable busbar trunking within transformer and meter room,<br>- Breaking of walls/penetrations from genset to the LV Panel<br>- Reinstate brickwork in areas where there are cable penetrations with pyro fireseal. | 30 | m | | |
| **Carry over to Price Page - PS 1** | | | **R** | | |

| | | | | | |
|---|---|---|---|---|---|
| | **EARTHWORK & CIVIL** | | | | |
| 2.3.17 | Supply deliver and install suitable sound proofing within the generator plant room. Sound attenuated to <70dB. | 50 | m2 | | |
| 2.3.18 | Supply, deliver and Install & commission heat extraction/ventilation system within the generator plant room; whereby the temperature within the plant room is capable of operating in 40deg celcius ambient temperature at full load. (Remove exisiting system in the event of replacement) Annexure 10 - Section 2: Scope of Contract<br>- This must include a minimum size extraction fan of 800mmx800mm wall mounted extraction fan fed off generator essential panel; including cabling, isolators, louvres and guards (front and back).<br>- Heat extraction must include a minimum size oscillating fan of 630mm wall mounted fed off generator essential panel; including cabling, isolators, guards (front and back). | 60 | m2 | | |
| 2.3.18 | Provision for Refurbishment of Generator Plant Room<br>Annexure 10 - Section 2: Scope of Contract | | Item | | |
| 2.3.19 | Provision for Refurbishment of Meter Room/Substation<br>Annexure 10 - Section 2: Scope of Contract | | Item | | |
| 2.3.20 | Replace existing substation/meter room door | 1 | Each | | |
| 2.3.21 | Construct a new reinforced concrete base of suitable strength on top of which the diesel bulk tank will be located in a position to be discussed at site briefing. Tentatively to be adjacent to the generator plant room. (Including bulk earthworks, excavation compaction and rubble removal ie. carting away of all unwanted material. Item includes earthworks and all civil works associated with plinth installation. Minimum Comprehensive strength of Concrete 30MPa. | 1 | Each | | |
| 2.3.22 | Refurbish existing generator plant room doors: Derust, Sand down, Prime, Respray/Repaint doors | | Item | | |
| | **DIESEL TANKS & PIPEWORK** | | | | |
| 2.3.22 | Supply, deliver and install ISO 9001 quality containerised double walled (self-bunded) 5,000 litre bulk fuel tank as per Annexure 10: Section 7.7 with a water/fuel separator complete with new housing and filter incorporated into fuel system. | 1 | Each | | |
| 2.3.23 | Provision for specialized petrochemical installation Contractor in accordance with SABS 0131 Part 2/1979 and SABS 089 Part 3/1991. | | Item | | |
| 2.3.24 | Supply, deliver and install dedicated fueling point with all associated pipework, connectors and valves for refuelling bulk tank. **Fuelling point to have self contained bunded area for spillage.** | 1 | Each | | |
| 2.3.25 | Supply, deliver and install: water absorbers (tank snakes) **Black** for heavy duty application | 2 | Each | | |
| 2.3.26 | Supply and deliver first fill of 50ppm Diesel to Day tank to bulk tank and day tank for commissioning. | 5500 | L - litres | | |
| 2.3.27 | Supply and Deliver portable electric DIESEL DRUM PUMP KIT with K33 METER 220V fuel pump (7.7.1 Annexure 10) | 1 | Each | | |
| | | | | | |
| **Carry over to Price Page - PS 2** | | | **R** | | |

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

**C2 .3 BILLS OF QUANTITIES**

**The Quantities measured in the Bill are PROVISIONAL and are subject to remeasurement at completion of the works.**

| ITEM | DESCRIPTION | QTY | UNIT | RATE | TOTAL |
|---|---|---|---|---|---|
| | **COMPLIANCE, DOCUMENTATION & LABELLING** | | | | |
| 2.3.28 | Provision for Electrical compliance certificates | 1 | Each | | |
| | **Supply, delivery, installation and commissioning of fire protection system including:** | | | | |
| 2.3.29 | Fire Suppression/extinguishing equipment (1off, mounted) | 1 | Each | | |
| 2.3.30 | Fire detectors linked to existing Fire detection and alarm panel (150m away) | 2 | Each | | |
| 2.3.31 | Fire Certificate of Compliance | 1 | Each | | |
| 2.3.32 | Supply, deliver and install diesel spill kit | 1 | Each | | |
| 2.3.33 | O & M manuals – 3 sets per unit. | 1 | Each | | |
| 2.3.34 | Submission of an approved Safety Plan specifying type of work to be carried out. | 1 | Each | | |
| 2.3.35 | Supply and install new labelling, signage and safety procedures:<br>1. Within and Outside Plant room<br>2. On Control Panel<br>3. On LV Panel<br><br>in accordance with the DoH Policy document and SANS 10142 | 1 | Item | | |
| 2.3.36 | Provision for Professional Services - Electrical Engineers Design:<br>-Submission of Engineers Design Report for KZN DOH approval **(Design Report to include a minimum 5 day load analysis of the Nurses Residence)**<br>-Submission of Single Line Diagram for KZN DOH approval | 1 | Item | | |
| 2.3.37 | Provision for Site Establishment | 1 | Item | | |
| | | | | | |
| | **SERVICING & MAINTENANCE** | | | | |
| ***Note*** | ***In the event that Load Shedding Stages increase and multiple services are required during the 52 week/12 month retention period, kindly make provision for the price of a major service and fuel remediation to bulk and base tank.- **Service intervals shall be every 6 months for a minor service and every 250 hours/12 months whichever comes first. The prices below will remain as per the priced bid BOQ for the duration of the contract.*** | | | | |
| 2.3.38 | Major Service of diesel generator during the 12 month guarantee period. (12 months/250hour) | 6 | Each | | |
| 2.3.39 | Fuel Remediation and Tank Cleaning (12 month) | 2 | Each | | |
| | **GENERAL** | | | | |
| 2.3.40 | Provision for 250kVA portable loan unit (maximum of 20 days) | 20 | daily rate | | |
| 2.3.41 | Preliminaries and General: Contractor to provide detailed breakdown.<br>Note: P&Gs May not exceed 10% of the total Construction Costs **Refer to C2.2** | | Item | | |
| 2.3.42 | Refurbish existing generator plant room door: Derust, Sand down, Prime, Respray/Repaint doors | 1 | Each | | |
| 2.3.43 | Install new warning enclosure linked to all generator alarms, complete with siren and strobe. | 1 | Each | | |
| 2.3.44 | Balancing of 3-Phase loads at substation/meter room and Main Distribution Board to the Nurses Residence | 1 | Each | | |
| 2.3.45 | Install new warning enclosure linked to all generator alarms, complete with siren and strobe. | 1 | Each | | |
| **Carry over to Price Page - PS 3** | | | **R** | | |

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

**PRICE PAGE**

**N.B.: This form must be completed in detail signed by the Bidder and bears the signature of a witness.**

**Failure to comply with these requirements may result in the bid being disregarded.**

**CLOSING DATE AND TIME: _____ at 11:00.** **VALIDITY PERIOD: 12 WEEKS**

| **BID/CONTRACT NO: ZNB _____ PERIOD: _____** | |
|---|---|
| **St. Mary's Hospital – Nurse's Residence Generator Replacement** | NAME AND ADDRESS OF BIDDER(FIRM)<br>……<br>……<br>……<br>TEL: ……..<br>FAX: ……. |
| DOES OFFER COMPLY WITH THE SPECIFICATION?<br>*If not, furnish details of deviation in space provided for "Remarks"* | YES/NO<br>*(Delete which is not applicable)* |
| CONTRACT EXECUTION PERIOD | ……9……months |
| CARRIED OVER FROM SCHEDULE OF PRICES PS 1 | |
| PS 2 | |
| PS 3 | |
| | |
| | |
| **Subtotal :** PS 1 to PS 3 | R …… |
| **VALUE ADDED TAX @ 15%** (Rate applicable on date of submission of Bidder) | R …… |
| **TOTAL BID PRICE** | R …… |
| **REMARKS (If any):** | ……<br>(Signature of Bidder)<br>DATE: ……<br>……<br>(Signature of Witness)<br>DATE: …… |

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# PART C3. SCOPE OF WORKS

# C3.1 SCOPE OF WORKS
## GCC FOR CONSTRUCTION WORKS (Edition 2 of 2010)

**Scope of Works complied in accordance with SANS 10403 where reference is made to this part of SANS 1921-1:2004**

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender no:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

**SECTION 1**

## 1 EXTENT OF THE WORKS

### 1.1 EMPLOYERS OBJECTIVES

Installation of a new prime power supply generator set, indoor type including associated electrical equipment and minor building works.
Including 72 hours bulk fuel tank (+-5000litre)
Minor Building works within plant rooms

### 1.2 OVERVIEW OF THE WORKS

Installation of a new prime power supply generator set, indoor type including associated electrical equipment and minor building works.
Including 72 hours bulk fuel tank (+-5000litre)
Minor Building works within plant rooms

### 1.3 EXTENT OF THE WORKS

Diesel Generator, Sound attenuation, plant room and meter room refurbushment, bulk fuel tank.

### 1.4 LOCATION OF THE WORKS

The Site is located at : 1 Hospital Road, Abbot Francis Rd, Mariannhill, 3605

### 1.5 TEMPORARY WORKS

All temporary work to comply with the Occupational Health and safety Act (Act 85 of 1993)

## 2 ENGINEERING

### 2.1 EMPLOYER'S/CONTRACTOR'S DESIGN

In accordance with Annexure 10:Project Specifications

### 2.2 DESIGN BRIEF

Not applicable

### 2.3 DRAWINGS

See list of Drawings/Annexures attached to this document

**2.4 DESIGN PROCEDURES**

Not applicable

## 3 PROCUREMENT

**3.1 PREFERENTIAL PROCUREMENT PROCEDURES**

This tender will be subject to the implementation of the Preferential Procurement Regulations, 2022 pertaining to the Preferential Procurement Policy Framework Act, Act Number 5 of 2000 and the relevant Supply Chain Management Legislation and the KwaZulu-Natal Supply Chain Management Policy Framework published by the KwaZulu-Natal Provincial Treasury. Tenderers are referred to www.kzntreasury.gov.za for access to the relevant documents.
Tenderers are advised to familiarize themselves with the contents of the KwaZulu-Natal Supply Chain Management Policy Framework regarding Preference Point Systems, evaluation of tenders appeals and other matters.

**3.2 RESOURCE STANDARD PERTAINING TO TARGETED PROCUREMENT**

NOTE : This project will be adjudicated as not exceeding R 50,000 000,00

**3.3 SCOPE OF MANDATORY SUBCONTRACT WORK**

DIESEL FUEL REMEDIATION INCLUDING THE CLEANING OF DIESEL FUEL TANKS BY A SPECIALIST SUB-CONTRACTOR.

**3.4 PREFERRED SUBCONTRACTORS/SUPPLIERS**

Not applicable

**3.5 SUBCONTRACTING PROCEDURES**

Not applicable

## 4 CONSTRUCTION

**4.1 APPLICABLE SANS 2001 STANDARDS FOR CONSTRUCTION WORKS**

The Contractor is referred to the "Model Preambles to Trades - 2008", any "Supplementary Preambles", the Electrical Specifications and Mechanical Specification for full descriptions of materials and methods referred to in these Bills of Quantities/Lump Sum documents, insofar as they apply. The Contractor is advised to study the "Standard Preambles to all Trades", any "Supplementary Preambles", the Electrical Specifications and Mechanical Specification, before pricing Bills of Quantities/Lump Sum documents.

Where the description in the Bills of Quantities/Lump Sum documents differ from those in the Standard Electrical Specifications, the descriptions in the Bills of Quantities/Lump Sum documents are to apply. No claim whatsoever will be allowed in respect of errors in pricing due to brevity of description of items in the Bills of Quantities/Lump Sum documents which are fully described when read in conjunction with the relevant Preambles and/or Specifications. Suppliers of materials and the like, whose quality systems apply with one or more of the SABS/SANS ISO 9000 Series should be used whenever possible in the absence of a particular SABS/SANS Specification Standard Mark.

Wherever the words "shall be deemed to be included in the description", "shall be stated" or other words having the same effect, appear in the Standard System, it shall be deemed that all descriptions in these Bills of Quantities/Lump Sum documents incorporated such inclusions and statements whether specifically stated or not.

The Contractor is hereby informed that where SABS/SANS Specifications are referred to in these Bills of Quantities/Lump Sums documents and Specifications thereto, then ONLY the Specification of Work Clauses will apply. The method of measurement and payment clauses will NOT apply to this Contract.

The Contractor is hereby informed that risk of collapse and keeping excavations free from water (excluding subterranean water) generally are deemed to be included in the descriptions unless accommodated in the system of measurement. Please refer to the Geotechnical Investigation report when included at the end of these tender documents.
Whenever reference is made to "Sub-Contractor", "Nominated Sub-Contractor" or the like in the specifications included or referred to in these Bills of Quantities/Lump Sums documents, it shall be deemed to mean "Contractor" as defined.

**4.2 APPLICABLE NATIONAL AND INTERNATIONAL STANDARDS**

See above 4.1

**4.3 PARTICULAR / GENERIC SPECIFICATIONS**

The Contractor is referred to the following documents whether attached to this document or not:

| SPECIFICATION | PAGES |
|---|---|
| Specification for HIV/AIDS Awareness (CIDB) | HIV1 TO HIV3 |
| Specific Construction, Safety, Health and Environmental Plan | |
| Standard Preambles for all Trades (Rev 3) - DOH 2009 | 1 to 95 |
| General Electrical Specification | E/1 to E/20 |
| Lightning Protection Installation | LP/1 to LP/6 |
| Occupational Health and Safety Act, 1993, Incorporation of DoH Standard Specification for Generators | |

**4.4 CERTIFICATION BY RECOGNIZED BODIES**

Only contractors registered with the Electrical Contracting Board of South Africa or with the Dept. of Labour as an Electrical Contractor, in accordance with the Regulations of the Occupational Health and Safety Act will be accepted and permitted to do work under this contract.

**4.5 AGRÉMENT CERTIFICATES**

Not applicable

**4.6 PLANT AND MATERIAL PROVIDED BY THE EMPLOYER**

Not applicable

**4.7 SERVICES AND FACILITIES PROVIDED BY THE EMPLOYER**

None.

**4.8 OTHER SERVICES AND FACILITIES**

The Contractor shall provide any artificial lighting which may be necessary or required for the proper execution of the works, and provide electric power and water required by all Sub-Contractors, Nominated Sub-Contractors and Sub-Contractors appointed directly by the Administration.
The Contractor shall give all notices and pay all fees in connection with temporary electrical and water connections and shall connect temporary Electrical and Water meters for and pay for all current and water consumed.
The Contractor is advised that the permanent light fittings and water points of any kind installed in the Works are not to be used to provide temporary lighting and supplement water requirements for construction purposes.

# 5 MANAGEMENT

## 5.1 APPLICABLE SANS 1921 STANDARDS

SANS 876:2016 - Cable terminations and live conductors within air-filled enclosures (insulation co-ordination) for rated a.c. voltages from 7,2 kV up to and including 36 kV.
SANS 1874:2015 - Switchgear - Metal-enclosed ring main units for rated a.c. voltages above 1 kV and up to and including 36 kV.
o The Occupational Health and Safety Act (Act 85, 1993) as amended
o The control panel, associated components and wiring shall be installed in compliance with the latest, relevant and applicable standards.
o SANS 10147: Refrigerating systems, including plants associated with AC systems
o SANS 347: Categorization and conformity assessment criteria for all pressure equipment
o SANS 10142: Code of Practice for Wiring of Premises
o SANS 60947-1: 2005/IEC 60947-1: 2004 to SANS 60947-8: 2004/IEC 60947-8: 2004: Low voltage switch gear and control gear.
o A Certificate of Conformity, in accordance with the OHS Act as amended and SANS 347, will be required for all refrigeration and air-conditioning works
o KwaZulu-Natal Department of Health Policy on Design of Mechanical Installations
o An Electrical Certificate of Compliance, in accordance with the OHS Act as amended, will be required for all Electrical Works.
o The Machinery and Occupational Safety Act - Act 6/1983
o The Municipal by-laws and any special requirements of the Supply Authorities of the area or district concerned.
o Local Fire Regulations.
o All building works shall be in accordance with the Standard Preambles to All Trades. The contractor should fully familiarise himself with these documents prior to quoting.
o SECTION 2 : SPECIFICATION DATA ASSOCIATED WITH SANS 1342, SANS 10089 & SANS 10131.

## 5.2 RECORDING OF WEATHER

The Contractor shall keep record of abnormal climatic conditions to facilitate the adjudication of claims for extension of the contract period.

The Contractor shall allow in his programme for the following number of days for rain days (rain > 10mm per day) as per the table below:

| CURRENT YEAR | | | YEAR + 1 | YEAR + 2 |
|---|---|---|---|---|
| January | *w/days* | 3 | 4 | 4 |
| February | *w/days* | 3 | 5 | 5 |
| March | *w/days* | 3 | 5 | 5 |
| April | *w/days* | 3 | 3 | 3 |
| May | *w/days* | 3 | 3 | 3 |
| June | *w/days* | 3 | 3 | 3 |
| July | *w/days* | 3 | 3 | 3 |
| August | *w/days* | 3 | 3 | 3 |
| September | *w/days* | 3 | 3 | 3 |
| October | *w/days* | 3 | 3 | 3 |
| November | *w/days* | 3 | 4 | 3 |
| December | *w/days* | 5 | 5 | 3 |

## 5.3 MANAGEMENT MEETINGS

In order to facilitate the smooth functioning of the Works and to ensure the closest co-operation between all the parties concerned, the Employer will call for regular meetings to be held on the site, at which a senior member of the Contracting firm and the General Foreman of the Works will always be required to be present.
In addition to the above, other persons will be required to attend these meetings as and when their presence is necessary, e.g., Consultants in all disciplines, representatives of the various Sub-Contractors, etc.
Proper minutes of these meetings will be kept by the Employer\Principal Agent and copies will be circulated to all persons attending the meetings and to others who need to be kept informed.

**5.4 FORMS FOR CONTRACT ADMINISTRATION**

The Employer shall provide all necessary forms.

**5.5 ELECTRONIC PAYMENTS**

The Contractor shall provide all required information to the Employer to facilitate electronic payments upon request.

**5.6 DAILY RECORDS**

The Contractor shall keep daily records of people and equipment employed as well as a site diary in respect of work performed on the site.
At the end of each week the Contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all Sub-Contractors on the works each day.
At the end of each week the Contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used on the works.

**5.7 BONDS AND GUARANTEES**

The Contractor shall within 10 calendar days after receiving notice from the Engineer and prior to 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.

| | |
|---|---|
| **5.8** | **PAYMENT CERTIFICATES**<br><br>Requirements will be in accordance with the Employers prescriptions. |
| **5.9** | **PERMITS**<br><br>The Contractor is advised that, in the case of an existing building or institution, all security measures in force will remain in operation and he must acquaint himself and his Employees with them as he and his Employees will at all times be subject to these measures.<br>The Contractor will on no account extend his operations beyond the confines of the building site as indicated by the Employer and must ensure that all his Employees are made aware of these limits. Any Employee disregarding this instruction and found outside the limit of the building site without authority, shall be redeployed immediately and shall not again be employed on this Contract.<br>The Contractor will be responsible for ensuring that this instruction is strictly enforced and must provide and remove upon completion or when directed, such other necessary temporary barriers, fences, etc., as may be required and is to allow opposite this item for any charges he may wish to make in this connection.<br>The Employer will accept no responsibility whatsoever for damage to or the loss of plant, materials, etc., from the site. |
| **5.10** | **PROOF OF COMPLIANCE WITH THE LAW**<br><br>The following certificates must be provided before first delivery is taken:<br>- Electrical Compliance Certificate<br>- Lightning Certificate<br>- Electrical and Mechanical test certificates<br>- SANS 10400-A:2010 compliance certificates<br>- Latest National Building Regulation<br>- Asbestos removal compliance certificates<br>- Registration with ECB or DOL<br>- Registration with the Institute of Waste Management of Southern Africa (IWMSA)<br>- Disposal Certificate by an accredited Toxic Waste Disposal Company<br>- Independent laboratory test results of remdiated diesel fuel |
| **5.11** | **INSURANCE PROVIDED BY THE EMPLOYER**<br><br>Not Applicable |

**SECTION 2**

## SPECIFICATION DATA ASSOCIATED WITH SANS 1921-2004

| Clause Numbers | |
|---|---|
| **4.1.7** | **The requirements for drawings, information and calculations for which the Contractor is responsible are:** |
| | As built drawings of all electrical installations, including but not limited to Generator sets, LV Switchgear & Control Panel, Schematic and Layout of Generator plant reticulation. |
| **4.2.1** | **The responsibility strategy assigned to the Contractor for the works is:** |
| | Strategy A |
| **4.2.2** | **The structural engineer is:** |
| | N/A |
| **4.2.3** | **Drawings & other info are to be submitted in accordance with the contractors programme** |
| | Not applicable |
| **4.3** | **The planning, programme and method statement are to comply with the following:** |
| | N/A |

| | |
|---|---|
| **4.12.1** | **Samples of materials** |
| | The work is to be executed with materials of the best specified and in the most substantial and workmanlike manner under the inspection of the Employer and to his satisfaction.<br>The Contractor shall furnish, without delay, such samples as called for or may be called for by the Employer, who may reject all materials or workmanship not corresponding with the approved sample.<br>The samples of materials, workmanship and finishes that the Contractor is to provide and deliver to the employer are: |
| **4.12.2** | **Fabrication drawings that the contractor is to provide to the employer are:** |
| | None |
| | |
| **4.12.3** | **Office accommodation, equipment, accommodation for site meetings and other facilities for use by the employer and his agents are:** |
| | OFFICE FOR FOREMAN |
| | Provide, erect, maintain and remove at completion a suitable temporary office for the Contractor or his Foreman, perfectly secured, lighted and ventilated and having a desk with drawers. |
| | TELEPHONE |
| | The Contractor shall provide a telephone on the site for the use of the Contractor and all Sub-Contractors for the duration of the Contract, and must make the necessary application for connection, give all notices and pay all fees, rentals and charges for the service and also for all calls. |
| | OFFICE FOR INSPECTOR OF WORKS |
| | Provide, erect, maintain and remove at completion a well constructed temporary office for the Inspector of Works not less than 4 x 3 m on plan and 3 m high to eaves to the approval of the Employer. The office shall be constructed of wood framing covered externally with corrugated iron or corrugated asbestos and with a lean-to roof covered with the same material as the external wall covering. The office shall be lined internally with soft board or other approved material and a ceiling shall be provided of the same material as the internal lining. A suspended wood floor shall be provided and is to finish not less than 300 mm above the ground level. A lockable door and a window, which provides adequate light and ventilation, shall be fitted.<br>An office constructed of 115 mm thick brick-work and provided with a screeded concrete floor and roofed and ceiled as above described may be accepted as an alterative but prior permission of the Employer will be necessary before construction of such an office is commenced and his requirements shall be stated and fulfilled by the Contractor.<br>The office shall be fitted in an approved manner with a sloping topped desk of height and length suitable for the laying out and studying of drawings, a desk or table with not less than two lock-up drawers, shelves, seating and wash-stand, and the Contractor shall provide all necessary attendance. |
| | TELEPHONE IN OFFICE FOR INSPECTOR OF WORKS |
| | The Contractor shall arrange for the installation of a lockable telephone in the Office for the Inspector of Works for the duration of the Contract. The Contractor will be required to make the necessary application for connection and give all notices on behalf of the Employer. The Employer will, however, be responsible for the direct payment of all fees, rentals and other charges by Telkom for the service for the Inspector of Works and for all calls made from this telephone. |

| | |
|---|---|
| | SHED |
| | Provide, erect, maintain and remove at completion, ample temporary sheds for the proper storage of materials and for the use of the workmen, and remove when no longer required. |
| **4.14.6** | **The requirement for provision and erection of signboards are:** |
| | Supply, erect, maintain and remove at completion a painted notice board, size overall 2800 x 2345 mm high sign written to detail as Drawing No. T9506 which drawing is available from offices of the Department of Public Works. Only the official notice board is to be displayed on the site and no Sub-Contractor's boards will be permitted. The Contractor, at his own cost, may provide a board on which all sub-contract firms' names may be sign written. The notice board is to be to the approval of the Employer and is to be maintained in first class condition and placed where directed at the entrance to the site and remain there for the duration of the Contract. |
| **4.17.1** | **Requirement for the termination, diversion or maintenance of existing services:** |
| | Should the Contractor come in contact with any underground cables or pipes during excavations, immediate notification must be made to the Employer and all work in the vicinity of such cables, pipes, etc., shall cease until authority to proceed has been obtained from the Employer. Should the Contractor damage underground cables or pipes resulting in a disruption of services to an existing institution such damage shall be repaired immediately. |
| **4.17.3** | **Services which are known to exist on the site:** |
| | Investigate and provide detail drawings. |
| **4.17.4** | **Requirement for detection apparatus** |
| | None |
| **4.18** | **ADDITIONAL HEALTH AND SAFETY REQUIREMENTS ARE:** |
| | By the submission of a tender, any Tenderer will, if awarded the contract to which this tender document relates, be deemed to be the mandatory as envisaged by Section 37 (2) of the Act. As a mandatory the successful Tenderer will be deemed to be the “principal contractor” and an employer in his/her/their own right with duties as prescribed in the Act and accordingly will be deemed to have agreed to be solely responsible for ensuring that in connection with the service to which this tender document relates, all work will be performed and machinery and plant used in accordance with the Act. Should the Contractor, for whatever reason be unable to perform as required by the Act, the Contractor undertakes to inform the Employer accordingly.<br>Tenderers are advised that it is a Condition of this Tender that a 'Construction Phase Safety, Health and Environmental Plan' specifically relates to the project for which tenders are being submitted and must be prepared by the Tenderer and submitted with the other tender documents at the time of tender. Failure to do so will<br>Tenderers are therefore advised to study the 'Construction Safety, Health and Environmental Specification' which is issued as part of this tender document, the Model Preambles to Trades - 2008, any project Specification included in this tender document and any and all drawings which are referred to and issued as part of this tender document before preparing their own project specific 'Construction Phase Safety, Health and Environmental Plan' . Tenderers are also advised that such a plan which is submitted with a tender but is incomplete or considered inadequate by the Employer or his Representative will invalidate the tender.<br>The Contractor will be deemed to have satisfied himself with his obligations in terms of the Act and to have allowed for all costs arising from compliance with the Act as no claim for extra costs arising from compliance with, and obligations in terms of the Act will be entertained. |
| **4.22** | **WORK BY NOMINATED AND SELECTED SUBCONTRACTORS COMPRISE:** |
| | List of applicable sub-contractors to be compiled post award. |

# C3.2 - SPECIFICATION FOR HIV/AIDS AWARENESS

## 1 Scope

This generic specification contains requirements applicable to the reduction of the risk of transfer of the HIV virus between and among construction workers and the local community through the following four strategies:

a) raising awareness about HIV/AIDS;

b) providing construction workers with access to condoms;

c) HIV counselling, testing and referral services; and

d) Sexually Transmitted Infection diagnosis and treatment.

## 2 Normative references:

The following standard contains provisions that, through reference in this text, constitute provisions of this standard:

SANS 4074 ISO 4074, *Condom Rubbers*

## 3 Definitions and Abbreviations

### 3.1 Definitions

**Construction Worker:** all persons in the employ of the contractor or in the employ of any of the subcontractors contracted by the contractor.

**Local Community:** the communities local to the site which are most likely to have contact with the construction worker and, in particular, sex workers in those communities.

**Service provider:** the natural or juristic person recognised by the South African Department of Health as specialist in conducting Aids Awareness Programmes.

### 3.2 Abbreviations

STI: Sexually transmitted infection

HIV: Human Immunodeficiency Virus

AIDS: Acquired Immune Deficiency Syndrome

## 4 Objectives

The objectives are to:

a) reduce the risk of transfer of the HIV virus between and among construction workers and the local community;

b) raise awareness amongst construction workers and the local community of the risk of infection with the HIV virus;

c) promote early diagnosis; and

d) assist affected individuals to access care and counselling.

b) either place and maintain HIV/AIDS awareness posters of size of not less than A1 in areas which are highly trafficked by construction workers, or provide construction workers with a pamphlet, in languages largely understood by construction workers, which

c) encourage voluntary HIV/STI testing;

d) provide information concerning counselling, support and care of those that are infected services; and

e) comply with the requirements of 5.2.

***The* provisions *of* 5.1 c) *and d) do not apply to* this contract.**

**5.2 HIV awareness programme**

**5.2.1** The contractor shall:

a) engage a qualified service provider as described in the scope of works to conduct an HIV Awareness Programme which is structured to achieve the outcomes stated in 5.2.3 for contract workers as soon as a construction workers camp is established and populated or, where no such camp is established, within two weeks of the commencement of a significant portion of the works and at subsequent intervals, if any, provided for in the scope of works; and

b) arrange for, provide a suitable venue, and instruct all construction workers to attend the HIV Awareness Programme and notify the Employer's Representative of the date, time and venue whenever a session with construction workers is conducted.

**Note: The National Department of Public Works maintains a list of qualified service providers.**

**5.2.2** The contractor shall do nothing to dissuade construction workers from attending such an HIV Awareness Programme and shall take all reasonable steps to ensure that a minimum of 90% of construction workers engaged in the works attend such a programme, when it is conducted.

**5.2.3** The outcomes of the HIV Awareness Programme shall as a minimum, result in contract workers exposed to such a programme being able to:

a) communicate the existence of problems of HIV and be able to outline the consequences of transmission of HIV to or from the local community;

b) recall and communicate the mode of HIV transmission and preventative measures including the proper use of the condom.

**The HIV/ Aids awareness programme described in 5.2 is to be repeated at four month intervals throughout the duration of the contract. (Four times in total, including the initial one at the start of the contract)**

### 5.3 Reporting

**5.3.1** The contractor shall prepare and attach to his claims for payment a brief report which outlines how the actions taken by the contractor in the period for which payment is claimed satisfy the requirements and a schedule which lists the names, identity numbers, trade / occupation and name of employer of all construction workers exposed to the programme (see **HIV/STI Compliance Report**).

**5.3.2** The employer's representative shall certify the report and schedule described in 5.3.1 whenever a claim for payment is issued to the employer.

**Note: In the event that the contractor fails to satisfy the requirements of this specification, the employer (Head: Public Works) may apply any of the sanctions provided for in the contract. Sanctions may include the application of a financial penalty of .04% of the Contract Sum.**

The *HIV /Aids* awareness programme *described* in 5.2 shall in addition *be conducted* for the benefit *of* the local community on two occasions in the community centre nearest to the building site. The contractor shall be *responsible* for inviting identifiable community-based *institutions and organisations, churches, and schools to participate in the* programme.

# C3.3 - HIV/STI COMPLIANCE REPORT

**Pro-forma reporting format in terms of the SPECIFICATION FOR HIV/AIDS AWARENESS**

| | | | |
|---|---|---|---|
| Project Code: | 222728 | | |
| Payment Claim number: | | Period covered by payment claim: | |

1. Distribution of condoms (briefly describe where and how condoms are distributed).

2. Posters / pamphlets (briefly describe where posters were placed / how pamphlets were distributed).

3. Voluntary testing (briefly describe the actions taken / information provided to promote testing).

4. Counselling, support and care (summarise information provided).

5. HIV awareness programme (briefly describe action).

6. Schedule of construction workers exposed to the HIV awareness programme.

| Name | Identity number | Trade / occupation | Name of employer |
|---|---|---|---|
| | | | |
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| | | | |

I hereby declare the above to be a true reflection of actions taken to ensure compliance with the specification.

**For Contractor:**

Name: _____

Signature: _____

Date: _____

**Employer's representative:**

Name: _____

Signature: _____

Date: _____

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# PART C4. SITE INFORMATION

# C4.1 SITE INFORMATION
## GCC FOR CONSTRUCTION WORKS (2 Edition of 2010)

| | | | |
|---|---|---|---|
| **Project title:** | **St. Mary's Hospital – Nurse's Residence Generator Replacement** | | |
| **Tender No.** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

## C4.1 Site Information

**C4.1 GENERAL**

(a) Access roads to generator installation site rooms are tar surfaced and paved. Entry points to the site must be inspected during site briefing to ascertain clearances for trucks, earthmovers and rigging equipment. Paving weight restrictions to be verified prior to installation.

(b) Lighting is poor at night and should the contractor be forced to work after hours, contractor to arrange for adequate temporary lighting at their own cost.

(c) Generator to be connected from existing substation and Contractor to make prior arrangements with eThekwini Municipality for access control and switching. These dates and times to be submitted to KZN DoH and St Mary's Hospital Management. Requirements for Standbu power plant (portable loan unit) to be approved and confirmed at Site Handover

**C4.2 GEOTECHNICAL INVESTIGATION REPORT**

(a) Geotechnical report to be conducted and form part of the plinth design and construction within the Engineers Design.

KWAZULU-NATAL PROVINCE
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**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# PART C5 - DRAWINGS / ANNEXURES

# C5.1 - LIST OF DRAWINGS/ANNEXURES

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

| | | | |
|---|---|---|---|
| **Tender No.:** | **ZNB 5245/2023-H** | **Project Code:** | **222728** |

The following drawings/annexure's shall be issued during the Tender period to form part of the tender documentation. Where applicable, drawings/annexure's could be re-issued to the Contractor at commencement of the construction phase.

| **DRAWING NO** | **DESCRIPTION** |
|---|---|
| Drawing A | Substation or Meter room door detail |
| | |
| | |
| | |
| | |

| **ANNEXURES** | |
|---|---|
| Annexure 1 | Joint Venture Agreement |
| Annexure 2 | Health and Safety Bill of Quantities |
| Annexure 3 | Builders Lien Agreement |
| Annexure 4 | Map of Tender submission location |
| Annexure 5 | DOH Standard Preambles to all trades 2009 |
| Annexure 6 | KZN DOH Generator Preventative Maintenance Service Programme - Annual Bi-Annual Service |
| Annexure 7 | DEPARTMENT OF HEALTH - GENERATOR PRE-DELIVERY SHEET REV 3.2 |
| Annexure 8 | DEPARTMENT OF HEALTH - GENERATOR COMMISSIONING CHECK |
| Annexure 9 | DEPARTMENT OF HEALTH - GENERATOR MANUALS CHECK SHEET OCT |
| Annexure 10 | Annexure 10 - Project Specifications -St. Mary's Hospital – Nurses Residence Generator Replacement |
| Annexure 11 | Annexure 11 - T2.32-33-34 OSHE St. Mary's Hospital – Nurse's Residence Generator Replacement |
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KWAZULU-NATAL PROVINCE
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**St. Mary's Hospital – Nurse's Residence Generator Replacement**

# ANNEXURES

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

# Annexure 1 - Joint Venture Agreement
**(March 2004)**
**(First Edition of CIDB document 1017)**

1. **PREAMBLE**

This agreement is made and entered into by and between

_____

_____

_____

of the first part and

_____

_____

_____

of the second part and

_____

_____

_____

of the third part.

*(allow for additional parties as necessary).*

Whereas the foregoing parties have resolved to form a Joint Venture under the title of

_____

_____

_____

for the exclusive purposes of securing and/or executing the Contract to be awarded by

*(name of Employer)*

**to the KZN Department of Health in respect of the following project:**

for *(brief description of Contract)*

**St. Mary's Hospital – Nurse's Residence Generator Replacement**

Now it is hereby agreed as follows :

**2. DEFINITIONS AND INTERPRETATION**

2.1 Definitions

The following words and expressions shall have the meanings indicated, except where the context otherwise requires. Defined terms and words are, in general, signified in the text of the Agreement by the use of capital initial letters, but the absence of such letters does not necessarily signify that a term, or word, is not defined.

**'Agreement'** means the agreement between the Members of the Joint Venture and includes this model form of agreement together with the Preamble, Specific Provisions, if any, Schedules 'A', 'B' and 'C' and any relevant Documents prepared prior to the signing of the Agreement and appended thereto.

**'Contract'** means the contract with the Employer for the supply of the Deliverables, for the purposes of securing and executing which, the Joint Venture has been formed.

**'Deliverables'** means the works and/or services, equipment, materials, goods, etc. to be furnished by the Joint Venture to the Employer in terms of the Contract.

**'Document'** means any written, drawn, typed, printed, or photographic material, which relates to the Agreement.

**'Employer'** means the person, or body, which is to award the Contract and will employ the Joint Venture if it is awarded the Contract.

**'Joint Venture'** means the joint venture formed by the Members in accordance with the Agreement.

**'Management Committee'** means the body established in terms of the Agreement to manage all aspects of the work of the Joint Venture in securing and executing the Contract and in meeting the provisions for the Agreement.

**'Member'** means a person, or body which, being a party to the Agreement, is a member of the Joint Venture.

**'Member's Interest'** means the proportion expressed as a percentage, which the total monetary value of all resources provided and contributions made by a Member towards the execution by the Joint Venture of the Contract bears to the total of such values by all Members and, unless otherwise indicated in the Agreement, represents the extent to which the Member participates in the fortunes of the Joint Venture.

**'Representative'** means the person representing a Member on the Management Committee.

**'Schedules' means Schedules 'A', 'B' and 'C'** which set out general, financial and other information relating to the Members and the obligations, duties, rights, risks and benefits arising from their participation in the Joint Venture.

**'Specific Provisions'** means the variations, if any, required to this standard form of agreement for the specific purposes of the Agreement.

2.2 Interpretation

Unless inconsistent with the context, an expression in the Agreement which denotes:

- any gender shall include the other genders
- a natural person shall include a juristic person and vice versa
- the singular shall include the plural and vice versa

2.3 Headings

The headings to clauses of the Agreement shall not be considered part thereof, nor shall the words they contain be taken into account in the interpretation of any clause.

2.4 Law

The Agreement shall be construed in accordance with and governed by the laws of the Republic of South Africa and the English language versions shall prevail.

2.5 Language

English shall be exclusively used by the Members in the preparation of Documents unless otherwise indicated.

2.6 Conflict between Agreement and Contract

Should any provision of the Agreement be in conflict with the terms of the Contract, the Agreement shall be amended to the approval of the Management Committee so as to eliminate the conflict.

## 3. JOINT VENTURE GENERAL

3.1 Establishment and Purpose

The Joint Venture established by the Members in terms of the Agreement is an unincorporated association with the exclusive purposes of securing and executing the Contract for the benefit of the Members.

3.2 Termination

The operation of the Joint Venture and the validity of the Agreement shall terminate if and when it becomes evident that the Joint Venture will not be awarded the Contract, or, if the Joint Venture secures the Contract, when all obligations and rights of the Joint Venture and the Members in connection with the Contract and the Agreement have ceased and/or been satisfactorily discharged.

Unless otherwise decided by the Management Committee, the Agreement shall not terminate if a Member changes its name, or is taken over by, or merged with, another body.

This agreement will terminate when any one of the Members resigns, are liquidated or opts out of this agreement and the Joint Venture will be in breach of contract with the Employer and their contract could be cancelled.

3.3 Exclusivity

Unless otherwise agreed by the Management Committee, or provided for in the Contract no Member shall engage in any activity related to the Contract other than as a Member of the Joint Venture and Members shall ensure that their subsidiaries and other bodies over which they have control comply with this requirement.

3.4 Participation of Members

Except as may otherwise be stipulated in the Agreement, each Member shall be responsible for all costs incurred by it prior to the date of inception of the Agreement.

Subsequent to the date of inception of the Agreement, each Member shall, participate in the operations, risks, responsibilities and fortunes of the Joint Venture including, inter alia, the provision of funding, sureties, guarantees, insurances, human and other resources and participation in profits and losses to the extents indicated in the Schedules. Participation in any aspect not covered in the Schedules shall, if an agreement cannot be reached between the Members, be to the same extents as indicated by the Members Interests.

3.5 Management

The affairs of the Joint Venture shall be directed and controlled by the Management Committee, as set out in Section 4 hereof.

3.6 Confidentiality

All matters relating to the Agreement and the Contract shall be treated by the Members as confidential and no such matter shall be disclosed to any third party without the prior written approval of the Management Committee.

No Member shall be party to the dissemination of publicity relating to the Contract, or the Agreement, without the prior written approval of the Management Committee and the Employer.

3.7 Assignment

No Member shall cede, assign, or in any other way make over any of its rights, or obligations, under the Agreement without the prior written consent of the Management Committee.

3.8 Subcontracting

No Member shall subcontract any obligation, work or duty for which it is, itself, responsible in terms of the Agreement without the prior written consent of the Management Committee.

3.9 Variations to Agreement

No variation, modification, or waiver of any part of the Agreement shall be of any force, or effect, unless unanimously agreed by the Members and reduced to writing.

3.10 Liability

Each Member warrants that it will indemnify the other Members against all legal liabilities arising out of, or in connection with the performance of its obligations under the Agreement.

It is acknowledged by the Members that they may be held jointly and severally liable in respect of claims against the Joint Venture by the Employer or third parties.

**4. MANAGEMENT OF JOINT VENTURE**

4.1 General

The affairs of the Joint Venture shall be directed, controlled and managed by the Management Committee, which, within the terms of the Agreement and the Contract, shall have full authority to bind the Members in all matters relating to the affairs of the Joint Venture.

Communication between the Joint Venture and the Employer, or third parties, relating to the Contract shall be conducted exclusively by the Management Committee, or by such person as it may delegate to perform this function.

The Management Committee shall have the power to appoint a project manager and/or such other persons as it may see fit to appoint for the purpose of executing the Contract and may delegate such of its powers, responsibilities and duties as it may consider necessary, or desirable, to persons or bodies appointed or seconded for this purpose.

Such administrative functions as are necessary to ensure the effective operation of the Management Committee shall be performed by its chairman.

4.2 Management Committee

4.2.1 *Composition*

The Management Committee shall, unless otherwise agreed by all the Members, consist of one Representative of each Member and each Member shall be obliged, at all times, to maintain a Representative on the Management Committee.

Each member shall, not later than three working days after the signing of the Agreement, appoint its Representative and notify the other Members of the name and contact details of the Representative. Such Representative shall have the power to bind the Member that he represents in all matters relating to the execution of the Contract and the performance of the Agreement.

A Member shall be entitled, after giving the other Members not less than three working days written notice of his intention to do so, appoint, remove and/or replace, an alternate who shall, at any meeting of the Management Committee from which the Representative whom he represents is absent, be vested with all rights and powers and subjected to all the obligations of the absent Representative.

The chairman of the Management Committee shall be the Representative of the Member which has the largest Member's Interest. If two, or more, Members have the same, largest Member's Interest, the chairmanship shall rotate between the Representatives of such Members at three monthly intervals, the order of rotation to be determined by ballot.

Notwithstanding the foregoing, the chairmanship of the Management Committee may be determined, or changed, at any time by unanimous decision of the Management Committee.

No remuneration shall be paid by the Joint Venture to Representatives or their alternates for serving on the Management Committee,

4.2.2 *Meetings*

Meetings of the Management Committee shall take place at such times and places as the Management Committee may determine, provided that the chairman shall convene a meeting of the Management Committee to be held not later than ten working days after he has been requested, in writing, by a Member to do so. Not less than five working days written notice of any meeting of the Management Committee shall be given to all Representatives and their alternates.

The Management Committee may permit, or invite, persons other than Representatives or alternates to attend any of its meetings, but such persons shall not have voting rights.

4.2.3 *Decisions*

Each Representative shall have one vote on the Management Committee and where, in terms of this clause, a casting vote is required, this shall be exercised by the chairman.

All decisions of the Management Committee shall, desirably, be unanimous. Accordingly, if unanimity cannot, initially, be achieved in regard to a decision, the meeting at which that decision is sought shall be adjourned for a period of 48 hours to enable Representatives to consult with their principals. If, on resumption of the adjourned meeting, unanimity can still not be achieved, the decision, provided it is not one requiring unanimity of the Members, shall be taken by majority vote and, in the event of a tie, the chairman shall exercise a casting vote.

A Member not satisfied with a majority decision of the Management Committee may declare a dispute, to be dealt with in terms of Clause 8 hereof, but the majority decision shall, nevertheless, be implemented with immediate effect.

Decisions of the Management Committee, whether taken at a meeting, or otherwise, shall be recorded in written minutes, which shall be distributed by the chairman to reach the Representatives not later than five working days after those decisions were taken. Such minutes shall be deemed to have been affirmed by the Representatives unless written notice of dissent is received by the chairman not later than three working days after receipt of the minutes by the Representative.

4.2.4 <u>Powers and duties</u>

The functions, responsibilities and powers of the Management Committee shall include, inter alia, those listed below:

4.2.4.1 Formulating overall policy in regard to the achievement of the objectives of the Joint Venture.

4.2.4.2 Managing the day to day affairs of the Joint Venture.

4.2.4.3 Monitoring, directing and co-ordinating the activities of the Members to ensure that the objectives of the Joint Venture are achieved and that the obligations and responsibilities of the individual Members are met.

4.2.4.4 Monitoring and controlling the financial affairs of the Joint Venture and ensuring that proper books of account and financial records relating to affairs of the Joint Venture are maintained in an approved form and submitted to the Management Committee for approval at regular intervals, which shall not be longer than one month.

4.2.4.5 Determining the necessity for and the details of any changes in the duties and responsibilities of Members provided that any resulting changes in Members' Interests shall be unanimously approved by the Members.

4.2.4.6 Determining the terms and conditions of employment of personnel and the emoluments applicable to staff seconded to the Joint Venture by the Members.

4.2.4.7 Controlling and approving the appointment of all subcontractors.

4.2.4.8 Procuring, after the completion of the Contract and the release of all bonds, guarantees and sureties given in respect of the performances of the Joint Venture and the Members, the preparation and auditing of a final set of accounts, on the basis of which the final profits, or losses, attributable to the individual Members shall be determined and any necessary adjustments effected.

## 5 RESOURCES OF JOINT VENTURE

The resources to be utilised by the Joint Venture in securing and executing the Contract shall, insofar as these are to be provided directly by the Members, be as set out in the Schedules and may, from time to time, be amended by decision of the Management Committee, provided that the Member's Interests are not, except with the unanimous approval of the Members, affected thereby.

Similarly, specific areas of responsibility of the Members for the performance of work and the provision of facilities shall be as set out in the Schedules and may, from time to time, be amended by decision of the Management Committee, provided that the Members' Interest are not, except with the unanimous approval of the Members, affected thereby.

5.1 Schedule 'A' (General)

Schedule 'A' shall contain general information relating to the Joint Venture including, inter alia, the following :

1. The Employer's name and address.
2. A brief description of the Contract and the Deliverables.
3. The name, physical address, communications addresses and domicilium citandi et executandi of each Member and of the Joint Venture.
4. The Members' Interests.
5. A statement indicating whether, or not, Specific Provisions apply to the Agreement.
6. A schedule of insurance policies which must be taken out by the Joint Venture and by the individual Members.
7. A Schedule of sureties, indemnities and guarantees that must be furnished by the Joint Venture and by the individual Members.
8. Details of the persons, who, in the event of failure by the Members to reach agreement on the appointments of mediator and arbitrator, will nominate appointees to these positions in terms of Clauses 8.2 and 8.3.

5.2 Schedule 'B' (Financial)

Schedule 'B' shall contain information regarding the financial affairs of the Joint Venture including, inter alia, the following :

1. The working capital required by the Joint Venture and the extent to which and manner whereby this will be provided and/or guaranteed by the individual Members from time to time.
2. The banking accounts that are to be opened in the name of the Joint Venture and the manner in which these are to be operated.
3. The rates of interest that will be applicable to amounts by which Members are in debit, or credit, to the Joint Venture.
4. The names of the auditors and others, if any, who will provide auditing and accounting services to the Joint Venture.
5. The intervals at which interim financial accounts and forecasts will be prepared for approval by the Management Committee.
6. Insofar as not covered in Schedule 'C', the basis on which contributions of various types by the Members towards the work of the Joint Venture in securing, executing, managing and satisfactorily completing the Contract, will be valued.
7. The basis on which profits and/or surplus cash will, if available from time to time, be distributed to Members.
8. The basis upon which losses, if any, are to be apportioned to Members.

5.3 Schedule 'C' (Contributions by Members)

Schedule 'C' shall set out the contributions of various types, other than cash, that will be made by the individual Members towards the work and obligations of the Joint Venture and shall, as far as possible, indicate the monetary values to be placed on such contributions, which may include, inter alia, the following :

1. Staff seconded to the Joint Venture.
2. Work carried out and services provided to, or on behalf of, the Joint Venture.
3. Plant, equipment, facilities etc. made available for use by the Joint Venture.
4. Materials and goods supplied to, or on behalf of, the Joint Venture.
5. Licences, sureties, guarantees and indemnities furnished to, or on behalf of, the Joint Venture.
6. Joint Venture Disclosure form required for the Contract.

**6. BREACH OF AGREEMENT**

If a Member breaches any material provision of the Agreement, or delays or fails to fulfil its obligations in whole, or in part, and does not remedy the situation within fourteen calendar days of receipt of notice from the Management Committee, or another Member, to do so, the other Members shall have the right, without prejudice to any other rights arising from the default, to summarily terminate the Agreement and re-assign the defaulting Member's rights and obligations in the Joint Venture as they see fit and withhold any moneys due to the defaulting member by the Joint Venture.

Each Member shall indemnify the other Members against all losses, costs and claims which may arise against them in the event of the Agreement being terminated as a result of breach of the Agreement by the said Member.

**7. INSOLVENCY OF MEMBER**

Should a Member be placed in liquidation, or under judicial management, whether provisionally or finally, or propose any compromise with its creditors, the other Members shall be entitled to proceed in terms of Clause 6, as if the Member had breached the Agreement.

**8. DISPUTES**

8.1 Settlement

The Members shall negotiate in good faith and make every effort to settle any dispute, or claim, that may arise out of, or relate to, the Agreement.

If agreement cannot be reached, an aggrieved Member shall, if he intends to proceed further in terms of Clause 8.2 hereof, advise all other Members in writing that negotiations have failed and that he intends to refer the matter to mediation in terms of Clause 8.2.

8.2 Mediation

Not earlier than ten working days after having advised the other Members, in terms of Clause 8.1, that negotiations in regard to a dispute have failed, an aggrieved Member may require that the dispute be referred, without legal representation, to mediation by a single mediator.

The mediator shall be selected by agreement between the Members, or, failing such agreement, by the person named for this purpose in Schedule 'A'. The costs of the mediation shall be borne equally by all Members.

The mediator shall convene a hearing of the Members and may hold separate discussions with any Member and shall assist the Members in reaching a mutually acceptable settlement of their differences through means of reconciliation, interpretation, clarification, suggestion and advice. The Members shall record such agreement in writing and thereafter they shall be bound by such agreement.

The mediator is authorised to end the mediation process whenever in his opinion further efforts at mediation would not contribute to a resolution of the dispute between the Members.

8.3 Arbitration

Where a dispute or claim is not resolved by mediation, it shall be referred to arbitration by a single arbitrator to be selected by agreement between the Members or, failing agreement, to be nominated by the person named for this purpose in Schedule 'A'.

The Member requiring referral to arbitration shall notify the other Members, in writing, thereof, not later than thirty calendar days after the mediator has expressed his opinion, failing which the mediator's opinion shall be deemed to have been accepted by all Members and shall be put into effect.

Arbitration shall be conducted in accordance with the provisions of the Arbitration Act No. 42 of 1965, as amended, and in accordance with such procedure as may be agreed by the Members or, failing such agreement, in accordance with the rules for the Conduct of Arbitrations published by the Association of Arbitrators and current at the date that the arbitrator is appointed.

The decisions of the arbitrator shall be final and binding on the Members, shall be carried into immediate effect and, if necessary, be made an order of any court of competent jurisdiction.

**9. DOMICILIUM**

The Members choose domicilium citandi et executandi for all purposes of and in connection with the Agreement as stated in Schedule 'A'. A Member shall be entitled to change his domicilium from time to time, but such change shall be effective only on receipt of written notice of the change by all other Members.

Member No. 1

Thus done and signed at _____ this _____ day of _____20___

For and on behalf of_____*[Company]*

by *[name]* _____ who warrants his authority to do so.

_____

As witnesses 1. _____ As witnesses 2. _____

Member No. 2

Thus done and signed at _____ this _____ day of _____20___

For and on behalf of_____*[Company]*

by *[name]* _____ who warrants his authority to do so.

_____

As witnesses 1. _____ As witnesses 2. _____

Member No. 3

Thus done and signed at _____ this _____ day of _____20___

For and on behalf of_____*[Company]*

by *[name]* _____ who warrants his authority to do so.

_____

As witnesses 1. _____ As witnesses 2. _____

*[Allow for additional parties as necessary].*

Annexure 2

## HEALTH AND SAFETY IMPLEMENTATION COSTING

Contractor to give a breakdown of his Health and Safety costs on this sheet.

| ITEM | DESCRIPTION | UNIT | QUAN-TITY | MONTHS (Indicative) | RATE | AMOUNT |
|---|---|---|---|---|---|---|
| | | | (a) | | (b) | (a) x (b) |
| **1** | **MEDICALS** | | | | | |
| 1.1 | Pre-employment medical | Nr. | - | | | |
| 1.2 | Re-medicals - yearly | Nr. | - | | | |
| | **TOTAL** | | | | | |
| **2** | **PERSONAL PROTECTIVE EQUIPMENT** | | | | | |
| 2.1 | Overalls | Nr. | | | | |
| 2.2 | Hard Hats | Nr. | | | | |
| 2.3 | Safety boots/shoes | Nr. | | | | |
| 2.4 | Gloves | Nr. | | | | |
| 2.5 | Gumboots steel toe cap | Nr. | | | | |
| 2.6 | Safety glasses | Nr. | | | | |
| 2.7 | Reflector Bibs | Nr. | | | | |
| 2.8 | Barricading Material | M | | | | |
| 2.9 | Dust masks | Box 20 | | | | |
| | **TOTAL** | | | | | |
| **3** | **FIRE FIGHTING** | | | | | |
| 3.1 | Fire extinguishers - 4.5Kg | Nr. | | | | |
| 3.2 | Surveys - Annual Service | Nr. | | | | |
| | **TOTAL** | | | | | |
| **4** | **HEALTH AND SAFETY PERSONNEL** | | | | | |
| 4.1 | Safety Manager | Nr. | | | | |
| 4.2 | Safety Officer | Nr. | | | | |
| 4.3 | Construction Phase Safety, Health, Environmental and Waste Management Plan | Nr. | | | | |
| | **TOTAL** | | | | | |
| **5** | **FACILITIES** | | | | | |
| 5.7 | Degreasing & Toilet soap | Nr. | | | | |
| | **TOTAL** | | | | | |
| **6** | **FALL PREVENTION / PROTECTION** | | | | | |
| 6.1 | Safety harnesses with double lanyards | Nr. | | | | |
| 6.2 | Safety harnesses with Scaffold hooks | Nr. | | | | |
| 6.3 | Lifelines and vertical fall arrest systems | Nr. | | | | |
| 6.4 | Scaffolding – material, erection and inspection (Estimate for project) | Nr. | | | | |
| 6.5 | Temporary hand railing material and kick flats | Nr. | | | | |
| 6.6 | Chin Straps | Nr. | | | | |
| | **TOTAL** | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **7** | **FIRST AID** | | | | | |
| 7.1 | Replenishment of boxes and other supplies | Nr | | | | |
| | **TOTAL** | | | | | |
| **8** | **TRAINING** | | | | | |
| 8.1 | SHE Representative | Nr. | | | | |
| 8.2 | First Aid Level 1 | Nr. | | | | |
| 8.3 | Fire Fighting | Nr. | | | | |
| | **TOTAL** | | | | | |
| **9** | **SIGNAGE** | | | | | |
| 9.1 | All Signage as required by Law, regulatory, warning and information | Nr. | | | | |
| 9.2 | Posters for awareness | Nr. | | | | |
| | **TOTAL** | | | | | |
| **10** | **ELECTRICAL** | | | | | |
| 10.1 | Replacement of Locks required for lockouts | Nr. | | | | |
| 10.2 | Replacement of tags | Nr. | | | | |
| 10.3 | Replacement for Permit books | Nr. | | | | |
| 10.4 | Replacement of Callipers | Nr. | | | | |
| | **TOTAL** | | | | | |
| **11** | **OTHERS (Project Specific)** | | | | | |
| 11.1 | | Nr. | | | | |
| | **TOTAL** | | | | | |
| **GRAND TOTAL TO BE CARRIED TO THE PRELIMINARIES AND GENERAL IN BILL OF QUANTITIES** | | | | | | |

Annexure 3

# WAIVER OF CONTRACTOR'S LIEN

**DEFINITIONS**

| | |
|---|---|
| Contractor: | _____ |
| Employer: | Head of Department: Health (KZN Department of Health: Province of KwaZulu-Natal) |
| Agreement: | GCC FOR CONSTRUCTION WORKS - SECOND EDITION 2010 |
| Works (description): | **St. Mary's Hospital – Nurse's Residence Generator Replacement** |
| Site: | St Mary's Hospital |

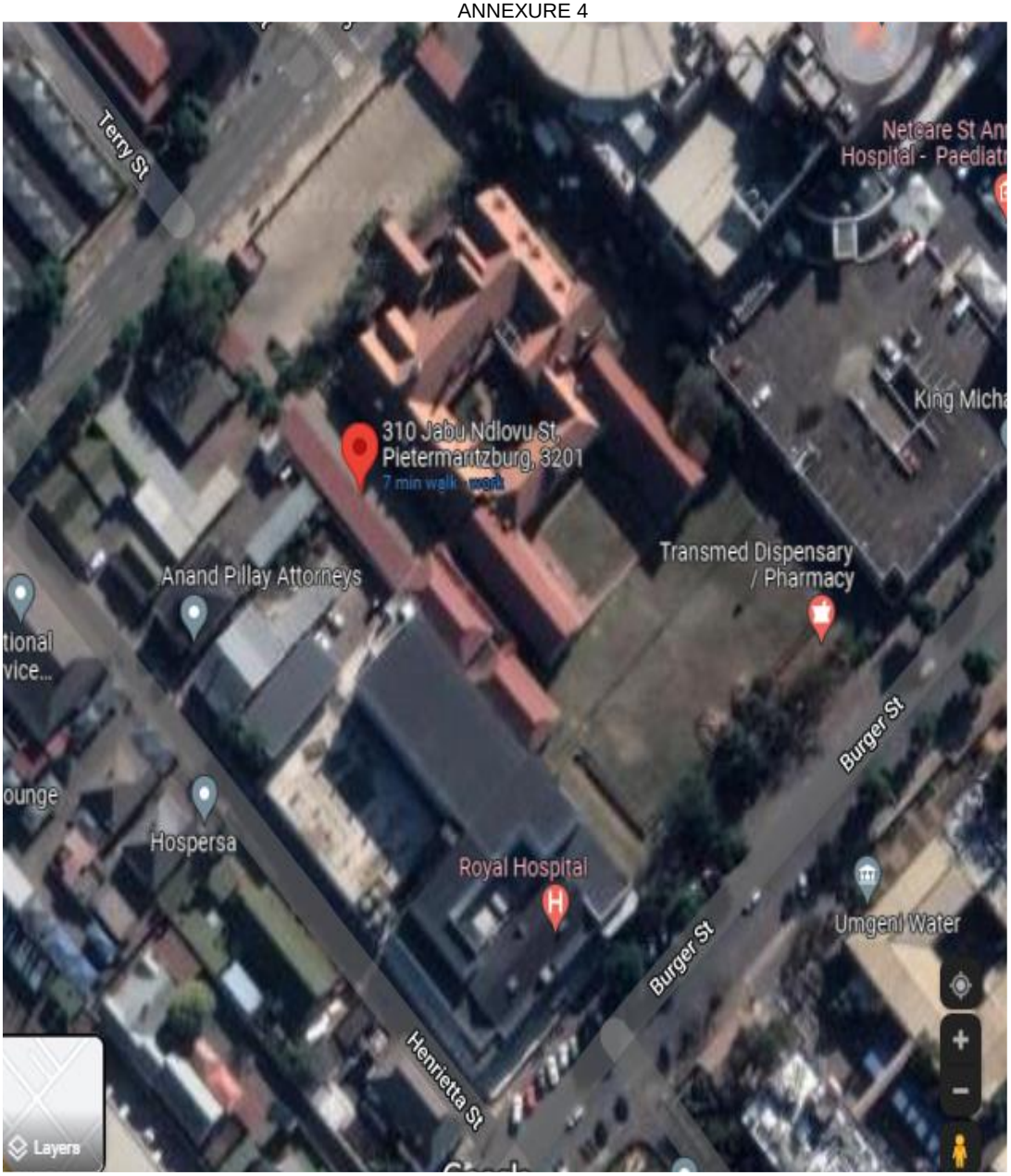
**AGREEMENT**

The Contractor waives, in favour of the Employer, any lien or right of retention that is or may be held in respect of the Works to be executed on the Site

Thus done and signed at _____ on _____
*[Date]*

_____ _____
Name of signatory Capacity of signatory

ANNEXURE 4


Terry St
Netcare St An
Hospital - Paediat
King Micha
310 Jabu Ndlovu St,
Pietermaritzburg, 3201
7 min walk - work
Transmed Dispensary
/ Pharmacy
Anand Pillay Attorneys
tional
vice...
ounge
Hospersa
Royal Hospital
Burger St
Umgeni Water
Burger St
Henrietta St
Layers

# ANNEXURE 5

# KWAZULU-NATAL

# DEPARTMENT OF HEALTH

# STANDARD PREAMBLES TO ALL TRADES
# REV 3 – JANUARY 2009

**Compiled by: Department of Health**
**Infrastructure Development Engineering Services Private Bag X9051 PIETERMARITZBURG 3201**

**INDEX**

**TABLES**



**NOTE:**

Only those clauses or portions of clauses in the following preambles, which refer to items in the Bills of Quantities, shall be considered as applying to the performance of this Contract.

**2.**

**1. ALTERATIONS**

**SITE VISIT**: — Tenderers are advised to visit the site prior to tendering and satisfy themselves as to the nature and extent of the work to be done, also to examine the condition of all existing buildings as no claim will be entertained on the grounds of ignorance of the conditions under which the work was to be executed.

**MATERIALS FROM THE ALTERATIONS**: — unless otherwise stated, will become the property of the Contractor and all these materials, together with all rubbish and debris must be carried away and the site left clean and unencumbered.

Items described as "removed" shall mean removed from the site.

Credit for the value of materials from the alterations is to be allowed for on the Summary/ Final Summary page.

Items described as to be re-used or to be handed over to the Administration are to be dismantled where necessary and stacked on site where directed, and the Contractor will be responsible for their removal and storage until required, and shall make good all items missing, damaged or broken at his own expense.

Unless otherwise described, no materials from the alterations shall be re-used in any new work without the written approval of the Department.

Prior to the removal of any timbers from the site, these are to be inspected by Government Entomologists. If any of these timbers are infested by wood destroying agencies, these timbers are to be disposed of in the manner prescribed by the Government Entomologist.

In taking down and removing existing work, particular care must be taken to avoid any structural or other damage to the remaining portions of the buildings.

**ASBESTOS REGULATIONS 2001:**

In terms of Asbestos Regulations 2001, no individual person, contractor or agent shall remove, demolish or strip any building containing asbestos or products containing asbestos (including asbestos roof sheeting, ceilings, guttering and down pipes) unless the work is performed by a **"Registered Contractor", registered with the Department of Labour**. All asbestos work shall be carried out under the supervision of an "Approved Inspection Authority".

**It is a requirement that before any work involving asbestos removal is carried out, the following procedure and documentation is followed: -**

1. Prior to the commencement of any demolition work, written notification shall be given to the Assistant Manager (Inspection and Enforcement), Durban Labour Centre, Masonic Grove, Durban, stating the name, address and details of the person(s) removing or stripping the asbestos. The notification shall include the date, time and place where the proposed work is to be carried out. (Regulation 3).
2. The name and details of the Approved Inspection Authority that is to supervise and confirm that the work is being carried out according to the specific requirements of the Asbestos Regulations 2001 (as amended), including the approved "written work procedure" document. This document shall be submitted and signed at least 14 days prior to commencement of demolition work by the Approved Inspection Authority. (Regulation 21).
3. The production of valid accreditation certification of training for all employees involved in the asbestos removal work.

4. On completion of the asbestos related work a “Clearance Certificate” which includes the asbestos disposal certificate shall be forwarded to the Department by the Approved Inspection Authority.
In terms of the above regulations, it is an offence to carry out any asbestos work as defined in the above regulations without the necessary approval / requirements being met.
Individual persons or contractors found to contravene these regulations will be issued with a **PROHIBITION NOTICE** which in effect will stop all work on site and the offenders will then be liable for prosecution.
**Any employer found guilty under the Asbestos Regulations 2001 may be liable to a fine and or imprisonment not exceeding 12 months.**
**NOTICE OF DISCONNECTIONS**: — The Contractor is to give ample notice to the Department and Local Authorities regarding any disconnections necessary prior to the removal or interruption of electrical or telephone cables, water supply and sanitary services, etc.
**DUST**: — The Contractor is to allow in his rates for taking all precautions necessary to prevent any nuisance from dust whilst carrying out the works.
**SHORING**: — Rates for shoring are to include for the use and waste of all props, needles, wedges, braces, nails and screws, etc. required and for all cutting, notching, framing and fitting, maintaining in position for the required periods and removing at completion. All shoring is to be executed in a manner approved by the Department.
**MATCHING EXISTING WORK**: — The terms “make good” or “making good” to existing work as described in the items shall mean making good with materials to match, all joined to existing.
**FORMING NEW OPENINGS, ETC. IN EXISTING WALLS**: — Rates for items of forming new or altering existing openings are, unless otherwise stated, to include for the following: -
a) Breaking out for and inserting adequate lintels over the new openings (except where stated in the items as being below an existing beam, slab or lintel), to the approval of the Department. The lintels are to be of in-situ concrete Class C, or of pre-cast pre-stressed concrete or of brickwork in 1:3 cement mortar, with a minimum bearing of 230mm at each end and suitably reinforced, and rates are to include for all necessary formwork, turning pieces, etc. and for wedging and pinning up to existing brickwork over in 1:3 cement mortar.
b) All shoring and propping required.
c) Facing up jambs in new brickwork in cement mortar properly bonded to existing,
d) Building up the portions of the openings stated in the items in new brickwork in cement mortar properly bonded to existing.
e) Formwork for concrete sills and thresholds where required.
f) Making good only to the finishes as stated in the items. (Note: — The making good of paint finishes has been measured separately).
g) Forming rounded angles, throats on external plastered soffits, mitres, etc. where required in all new plaster, render and granolithic finishes.
The supply, building in, fixing, etc. of all windows, doors, frames, etc. to the newly formed openings and the removal of all existing windows, doors, frames, etc. from openings to be altered, have been elsewhere measured.

**2. <u>EARTHWORKS</u>**

**SITE CLEARANCE**: —The item given in the Bills of Quantities for site clearance shall be deemed to include the removal from the site, or burning if permitted by the Local Authority, of shrubs and trees with trunks under 200mm girth measured at 1m above ground level,

hedges, bushes, other vegetation, rubbish and debris.
Holes left by roots are to be backfilled with earth and rammed.
**EXCAVATIONS:** — Rates for excavations are to include for forming and trimming to the correct levels, falls, slopes, curves, etc. for trimming sides, stepping, levelling and ramming bottoms, staging and disposing of the excavated material as described in the items. Rates for excavations to reduce levels over site are also to include for forming and trimming banks to the required batter. The Contractor is to allow in his rates for the bulking of excavated material.
The term "excavate", unless otherwise stated, shall mean excavate in "soft excavation" as defined below and for the purpose of classifying excavations the following will apply: —
a) **Soft excavation**: — shall be excavation in material that can be efficiently removed by a back-acting excavator of flywheel power approximately 0, 10 kW per millimetre of tined-bucket width without the assistance of pneumatic tools such as paving breakers, or that can be efficiently loaded without prior ripping or stockpiling by a rubber tired front-end loader of approximately 15t mass and a flywheel power of approximately 100 kW.
b) **Intermediate excavation**: — shall be excavation in material that requires a back- acting excavator of flywheel power exceeding 0,10kW per millimetre of tined-bucket width and the assistance of pneumatic tools prior to removal by equipment equivalent to that specified in (a) above.
c) **Hard rock excavation**: — shall be excavation in material that cannot be efficiently removed without blasting or without wedging and splitting prior to removal.
d) **Class A Boulder excavation**: — shall be excavation in material containing more than 40% by volume of boulders of size between 0.03m³ and 20m³ in a matrix of softer material or smaller boulders.
***Note*** *:* — Excavation of solid boulders or lumps of size exceeding 20m³ will be classed as hard rock excavation. (2) 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) **Class B Boulder excavation:** — shall be excavation of boulders only in a material containing 40% or less by volume of boulders of size between 0.03m³ and 20m³ in a matrix of softer material or smaller boulders.
***Note*** *:* — Those boulders requiring individual drilling and blasting in order to be loaded by a back-acting excavator as specified in (a) above, or by a track type front- end loader, will each be separately measured as Class B boulder excavation.
The excavation of the rest of the material will be classed as soft or intermediate excavation according to the nature of the material.
**Method of 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 Department will decide on the classification of the materials. The classification will be based on inspection of the material to be excavated and the criteria given in (a) to (e) above, as applicable. The decision of the Department shall be, subject to the relevant provisions of the contract, final and binding.
Should the Contractor consider that the excavation is other than "soft excavation" he must notify the Department immediately in order that an inspection be made and a decision arrived at by the Department as to the category of such excavation. Should the Contractor fail to give such notification, the excavation shall be deemed to be "soft excavation" and shall be measured and valued accordingly.
Blasting will only be permitted with the written authority of the Department, if and when permission is granted, it is to be executed only by persons holding the necessary Government Blasting Certificate and subject to all regulations imposed by the Department and/or Local Authority. In addition, the Contractor is to indemnify the Provincial Administration against all claims in respect of damage to persons and property resulting
from such blasting operations.

Before commencing any excavations, the Contractor must satisfy himself as to the accuracy of any levels indicated on the drawings, as no claim will be entertained at a later date for any alleged inaccuracy in such levels.

Excavation shall be carried down to such depths as are necessary to obtain firm foundations, but before proceeding to greater depths than are shown on the drawings, the Department's approval must be obtained.

The Contractor will be responsible if he excavates wider or deeper than shown or required. If the excavations are deeper than shown or required such extra excavations are to be filled in with mass concrete at the Contractor's expense. If the excavations are wider than shown or required, any form-wait or mass concrete filling required to the side of the concrete foundations is to be executed at the Contractor's expense and to the approval of the Department.

Depths of excavations as approved shall be checked and recorded by the a Departmental Official and the Contractor's Foreman before any concrete is laid or the excavations are otherwise covered or filled in. Notwithstanding such approval, any excavations which become waterlogged or otherwise spoilt after approval, shall be cleaned out and reformed, at the Contractor's expense and to the satisfaction of the Department, before any concrete, etc. is laid.

**WATER**: — The Contractor shall keep all excavations free from water or mud by pumping, baling or otherwise.

**WORKING SPACE**: — The Contractor is to allow against the items of "excavate to provide working space" for excavating beyond the extent of the net excavations measured to provide the necessary working space for the carrying out of such work as is described in the items. Rates are to include, in addition to the extra excavation, for any additional risk of collapse so incurred and for filling back and compacting the excavated material.

No separate item for working space is provided or will be considered where the face of the measured excavation is 750mm or more away from the finished face of the structure. Separate items for working space for the building of brick foundation walls on ordinary concrete wall footings will not be considered.

In the case of column base and pile cap excavations, where the dimensions between the column face and the excavation face is less than 500mm, working space has been measured for the width of the column face from the commencing level of excavation to the top of the column base or pile cap only where the top of the column base or pile cap exceeds 1.5m below the commencing level of excavation.

**RISK OF COLLAPSE**: — The Contractor shall maintain all excavated faces affecting the safety of the works and workmen. He must either provide all necessary temporary planking, strutting or shoring to all vertical excavated faces or carry the risk of collapse of these faces with all its implications. He must assume full responsibility in this connection and must allow in his rates accordingly. In addition, all excavated faces exceeding 1.5m deep are to be maintained in accordance with Government Regulations.

Quantities reflect the total superficial areas of the vertical excavated faces and will be subject to variation only in so far as these areas may vary, notwithstanding whether any temporary supports are used or not.

**FILLING, ETC.**: — All backfilling and filling under floors and paving must be of selected material from the excavations, unless otherwise stated, returned and compacted in layers as later described and with the top surface dressed to the correct levels and grades, all to
the approval of the Department. Under no circumstances will the Contractor be allowed to use clay, peat or other unsuitable material for filling.

Rates for all items of filling with material from the excavations are to include haulage not exceeding 100m from the perimeter of the excavations.

Any filling supplied by the Contractor is to be of suitable material approved by the Department.

**COMPACTION OF FILLING ETC.**: — All filling and backfilling is to be done in layers not exceeding 200mm thick before compaction, with the layers level to ensure uniform compaction. Each layer is to be thoroughly compacted over the whole of the area to a dry density not less than 90% of Mod. A.A.S.H.O. density. The surface of each compacted layer shall be uniform and tightly bonded. Care is to be taken that no damage is done to foundation walls, drains and other services.

The densities of compaction referred to are to be determined by tests carried out in accordance with A.S.T.M. Designation D 1557-58 and at an optimum moisture content of not more or less than 5% of the required Mod. A.A.S.H.O. The Contractor shall be responsible for having sufficient tests taken of the density of the compacted filling to ensure that the required compaction is being attained to the satisfaction of the Department. These tests are to be undertaken by an independent testing authority nominated by the Contractor to the approval of the Department. The costs of all tests in this connection shall be borne by the Contractor and shall be allowed for in his rates.

**PROTECTION AGAINST SUBTERRANEAN WOOD-DESTROYING TERMITES**: — Where protection against termites is to be provided: —

a) Remove vegetable matter

All dead roots and other vegetable matter likely to encourage termites must be removed from the ground under, against the building and from all filling material.

b) Treating the ground

The ground under surface beds, and below suspended wood floors, must be treated by the application of Soil Insecticides of Chlordane or Aldrin types complying with SANS Specifications 1165 and 1164 respectively, mixed with water and applied at the rate of not less than *5* litres of solution per square metre uniformly over the whole surface. The concentration of the solution must be strictly in accordance with the manufacturer's instructions and to the approval of the Department.

The Department reserves the right to take samples of the diluted solution, at any time, in order to test the concentration of the chemicals used.

Where the ground to be treated is of earth filling, the upper 50mm layer of filling must be levelled by raking, but must not be rammed until after the solution has been applied, and where of natural ground, it must be loosened to a depth of not less than 50mm and similarly levelled, in order to enable the solution to penetrate into the soil. After the solution has been applied and allowed to penetrate the surface, the soil must be well rammed and consolidated.

Before applying the solution to the ground under the floors, splay back earth for a depth and width of 75mm from the internal faces of walls enclosing the floors, against internal walls, sleeper piers, etc. and thoroughly saturate with the solution. After the solution has soaked into the earth, the splayed grooves must be filled with earth and consolidated.

The treated layer of soil under suspended wood floors must be protected with a 75mm thick layer of approved clean gravel, finished to an even surface.

The treated layer of soil under concrete surface beds must be protected with a 25mm thick layer of well-consolidated approved grit prior to laying the waterproofing membrane.

Great care must be taken when laying concrete surface beds, protective layers, etc. in order to avoid rupturing the treated layer of soil. Should the treated layer be ruptured at any

point it must be made good and the area affected re-treated with the soil insecticide. Contractors are advised that:

a. Special precautions must be taken to protect the workmen whilst using the soil insecticide.

b. The treatment of filling or ground under floors shall be done as soon as practicable, so that treatment may dry out before the floors are laid.

c. The treatment of the ground must be carried out under the supervision of the Department.

d. The soil insecticide to be delivered to the site in sealed drums clearly labelled or stamped with the name of the product.

e. In addition to the foregoing the application of the soil insecticide to be carried out in accordance with SANS Code of Practice 0124 — the application of Certain Soil Insecticides for the Protection of Buildings.

f. The protective layers of gravel or grit have been measured separately.

**RE-USE OF EXCAVATED MATERIAL**: — Material of any kind that may be discovered on the site during the excavation shall remain the property of the Administration. Such material may, if approved, be used for aggregate. Material so used shall be valued and the value deducted from the Contract Sum.

**DEMOLITIONS**: — The Contractor is referred to the preambles for “Alterations” insofar as they apply and the following: —

The demolition of existing buildings is to be done in a practical and safe manner, under the continuous supervision of a competent Foreman. Rates for the demolition of existing buildings are to include for breaking up and removing all external screen walls, steps and ramps, surface water channels, rainwater sumps, gulleys, etc. and grubbing up and removing all foundation walls and footings, disconnecting and removing all services to a point not less than 1m beyond the perimeter of the buildings, plugging off ends of all remaining pipes, and for filling in all holes with clean earth and ramming up to ground level. All movable fittings and furniture, fire extinguishers and electrical and other equipment in the buildings to be demolished are to remain the property of and will be removed by the Administration prior to the commencement of the demolition.

Before commencing the demolitions, the Contractor shall comply with any Local Authority regulations in force in respect of rodent extermination, etc. and he shall obtain the required Clearance Certificate. Items to cover the cost of obtaining the certificate and the fumigation, etc. of the buildings to be demolished have been provided elsewhere in the Bills of Quantities, and the fumigation is to be carried out by a firm specialising in this type of work. The fumigation of the buildings to be demolished shall only be carried out if called for by the Local Authorities and if not required the value of the relevant items in the Bills of Quantities will be deducted from the Contract Sum.

After handing over the site to the Contractor, the risk of any loss or damage to the buildings to be demolished and the materials therein, caused by theft, vandalism, etc. shall be the responsibility of the Contractor and he shall take such precautions as he deems necessary against such loss or damage.

**GRASS PLANTING AND TURFING**: — Is to be “Cape Kweek” or “Umgeni” grass scientifically known as *Cynodon dactylon* or other local fine grass approved by the Department. In areas where fine grass does not grow readily, Kikuyu grass *Pennisetum clandestinum* may be substituted. The areas must be identified and the approval of the Department obtained before Kikuyu grass is to be planted.

**Grass Planting To Level Areas**: — The areas to receive grass are to be weeded and raked free of stones and other superfluous matter and all depressions left by the earthworks plant are to be filled in with approved topsoil. The planting of grass is to be carried out in

continuous root planting in rows 200mm apart. The method of planting called “sprigging” may be used as an alternative.

Immediately after completion of each strip or square, the area thus grassed is to be thoroughly watered and lightly rolled. Any drifting or piling up of the top soil due to wind or any other cause must be prevented as far as possible and should such piling up of soil against newly planted grass occur the soil must immediately be raked level and lightly rolled.

**Turfing**: — Banks are to be carefully trimmed to an even surface and weeded and raked free of stones, etc. and all depressions filled in with approved topsoil as before described. Turfing of banks is to be carried out with 25mm thick maximum 500mm x 1000mm weed- free grass sods, of grass as before described, and as approved by the Department. The grass sods are to be set in position in horizontal rows to broken bond and closely fitted together and tamped flat with a timber pummel, a maximum of two sods in every square metre of area covered being staked to the bank to maintain position, with and including one sharpened wood or bamboo skewer 250mm long and with all cavities between sods filled in with approved top soil and the whole area lightly top soil dressed on completion.

**Established Lawn**: — The use of established lawn in pieces size approximately 500mm x 1000mm x 25mm thick in lieu of grass sods on banks will be permitted provided that the established lawn is supplied and laid by a firm experienced in this type of work and to the approval of the Department. The fitting, tamping, staking and top dressing must all be as described for turfing, except that one piece per square metre is required to be staked as described.

**Fertilizer**: — An approved fertilizer of the following types— Type 2:3:2 for grass planted levelled areas and Type 3:2:1 for turfed or established lawn covered banks is to be supplied and applied by the Contractor at the rate of 400 kg per hectare. In the case of grass planted levelled areas the fertilizer is to be applied either before or after grass planting and in the case of turfed or established lawn covered banks the fertilizer is to be applied after the sods or pieces have been laid.

The fertilizer above described is to in addition to any fertilizer which may have been specified to be applied during either the operation of scarifying and grading the area to be grassed or the re-spreading of top soil.

A sample of the existing topsoil or the topsoil to be re-spread is to be sent to an approved fertilizer manufacturer for testing and advice on the acid or alkaline content of the soil. The cost of this test is to be borne by the Contractor if this is not provided free by the fertilizer manufacturer.

The requisite quantities of limestone ammonium nitrate for acidic soil or ammonium sulphate for alkaline soil as determined by the soil test will be supplied to the Contractor by the Department and the cost thereof is to be included in a Provisional Sum elsewhere in the Bills of Quantities. The application of this treatment is to be undertaken by the Contractor and his rates for grassing, etc. must include for same.

**Weed killer:** — “Weed Master or Turf Master” or other approved weed killer is to be applied to the entire grassed or turfed areas at a rate of 4 litres mixed with 200 litres of water per hectare, this being equivalent to 40-45 millilitres mixed with 5 litres of water per fifty square metres. The solution is to be sprayed on with a suitable spraying apparatus to achieve an even distribution. Six to eight weeks later, the operation is to be repeated. The application of weed killer is not to take place during wet weather. Weather conditions should be such as to allow a minimum of two hours or absorption before the likelihood of rain.

**Watering and Rolling**: — The entire turfed area is to be kept clear of weeds, lightly rolled and thoroughly watered throughout the period of the Contract and or at least three months from the time of acceptance of the grounds or until the grassing or turfing is well established if that is sooner, all to the satisfaction of the Department.

In the absence of rain, the initial watering of grassed or turfed areas is to be carried out as follows: —

Grass planted levelled areas: - at least twice a week. Established lawn areas: - at least once a week.
Turfed areas: - at least once a day for the first ten to fourteen days, thereafter at least once a week.
The Contractor must allow in his rates for providing and removing at completion all necessary temporary water piping complete with fittings, sprinklers, hoses, etc. as required for the proper watering of the grassed or turfed areas of the plateaux and banks.
**Cutting of Grass**: — The Contractor must commence mowing as soon as possible once turfed areas have become established and undertake regular mowing at approximately one-week intervals up to the date of final delivery, except that, during the maintenance period, the mowing of the plateaux will be undertaken by the Institution.
***Note:*** — All stages of grass planting and turfing are to be supervised on a full time basis by a competent person with the necessary experience and knowledge.
It shall be the responsibility of the Contractor to advise the Department when the following operations are to be carried out in order that his representative may be present: —
a) the application of fertilizer
b) the application of weed killer.
Should the Contractor fail to do so, the Department shall have the right to instruct the Contractor to repeat the operation at his own expense.

## 3. CONCRETE, FORMWORK AND REINFORCEMENT

**GENERAL:** — This specification applies to concrete work formed into its final shape and position in-situ.
All concrete and formwork shall be carried out in accordance with SANS Specification 1200 G — Concrete (Structural) (a copy of which the Contractor will be required to keep on the site so that it can be referred to at all times during the Contract), with the following amplifications and amendments: —
**INTERPRETATIONS**: — Clauses 2.1 and 2.2 of SANS Specification 1200G refer. This preamble, together with any other supplementary preambles appearing in these Bills of Quantities shall be deemed to be the project specification and are the “Portion 2” referred to in Clause 2.2.
**DEFINITIONS:** — Clause 2.3 of SANS Specification 1200 G refers. All references to the Engineer shall be deemed to mean the Department.
**MATERIALS**
Cement: —unless otherwise specified, shall be one or more of the following and shall, in each case, comply with the requirements of the relevant standard specification: —
Portland cement and rapid-hardening cement to SANS 471 Specification Portland blast-furnace cement to SANS Specification 626.
Portland cement 15 to SANS Specification 831.
Nevertheless, no cement other than ordinary Portland cement shall be used without the approval of the Department. Cement containing more than 15% blast-furnace slag will not be permitted in columns or in members less than 50mm thick.
In addition (for the abovementioned items) where Ordinary Portland cement is used, blast- furnace slag (from separate containers) **must not** be added in any proportion whatsoever.
No mixing of two different types of cement in the same batch will be allowed, and unless otherwise approved by the Department, the same brand and type shall be used in all exposed concrete.

Lumpy cement, broken sacks and sweepings shall not be used.
Cement supplied in sacks shall be used in the order in which it was delivered and shall not be kept in storage for longer than six (6) weeks without the approval of the Department.
**Water**: — Shall be clean and free from injurious amounts of acids, alkalis, sugar, organic matter and other substances that could impair the strength or durability of the concrete. If so required by the Department, the suitability of the water shall be proved by tests carried out by an approved laboratory.
**Aggregates:** — Unless otherwise specified both the coarse aggregate (stone) and the fine aggregate (sand) shall comply with the requirements of SANS Specification 1083. The Contractor is to prove compliance by means of either a certificate from the supplier or by grading analysis tests.
**Admixtures**: — i.e. materials other than cement, aggregate and water shall not be used in the concrete mix without the approval of the Department. The onus for proof of satisfaction to the Department for any admixture proposed shall be with Contractor.
**Reinforcement**: — for concrete shall be as specified and shall, in each case, comply with one of the following: —
a) Type A hot rolled mild steel bars of plain round cross section to SANS Specification 920
b) Type C Class 2 hot rolled high yield stress Grade 1 deformed bars to SANS Specification 920
c) Type D Grade 1 cold worked deformed bars to SANS Specification 920.
d) Welded steel fabric to SANS Specification 1024 manufactured from plain hard-drawn mild steel wire.
A sample reinforcing rod, approximately 600mm long, may be taken from each consignment of rods of similar diameter, for testing. If any sample is found unsatisfactory the whole consignment of rods from which the sample was taken will be rejected.
No substitution of the bars specified shall be made without the prior approval of the Department.
**REINFORCEMENT**
**Bending**: — Reinforcing bars shall be cut and bent according to the dimensions shown on the working drawings and in accordance with SANS Specification 82.
Except as allowed for below, all bars shall be bent cold and bending shall be done slowly, a steady even pressure being used without jerk or impact.
If approved by the Department, hot bending of bars of diameter at least 32mm shall be permitted, provided that the bars do not depend for their strength on cold working. When hot bending is approved, the bars shall be heated slowly to a cherry red heat (not above 840 C$^{o}$) and after bending shall be allowed to cool slowly in air. Quenching with water shall not be permitted.
**Fixing**: — All steel reinforcement, at the time of placing of the concrete, must be free from loose rust, scale, oil and other agents which will reduce the bond between the steel and the concrete or initiate corrosion of the reinforcement. Reinforcement exposed to sea spray shall be washed down, and the formwork drained, just prior to concreting.
Reinforcement shall be positioned as shown on the working drawings or as directed by the Department and maintained in those positions within the tolerances given in the Specification for Tolerances. It shall be secured against displacement by tying at
intersections with 1.6 or 1.25mm diameter annealed wire or by the use of suitable clips or, if permitted by the Department, by welding in accordance with SANS 1856. Welding will not

be permitted on cold worked bars. Reinforcement shall be supported in its correct position by hangers, saddles or cover blocks and aligned by chairs and spacers all of approved design and material. Where such hangers, saddles, chairs or spacers are of steel, they will be detailed on the drawings or in bending schedules.

**Cover**: —The minimum cover of concrete over reinforcement, excluding any applied finish, shall be as shown on the working drawings, or as directed by the Department.

Cover shall be maintained by using cover blocks, which shall be made of small aggregate concrete, not mortar, using the same cement and aggregate type and ratio as the parent concrete. Alternatively, cover blocks may be of the plastic type provided that sufficient number are used to prevent their collapse, that they are of a colour compatible with that of concrete and that the prior approval of the Department is given. Metal cover blocks shall not be used.

If the concrete face has a Class F2 smooth finish or some other special finish as is described elsewhere, hemispherical or pyramid shaped concrete cover blocks shall be used unless otherwise specifically approved by the Department.

Splicing: — or joining of reinforcing bars shall be made only as and where shown on the working drawings or as otherwise approved. The length of the overlap in a splice shall be not less than that shown on the working drawings or forty-five times the diameter of the bar if not shown.

**Protection of Exposed Bars**: — If left exposed for future bonding of extensions to the works, reinforcement shall be protected from corrosion as specified by the Department.

**Electric Current:** — Reinforcement shall not be used as a means for conducting electric current unless there is conformity with the requirements of SANS Code of Practice 03.

**Inspection of Reinforcemen**t: — Reinforcement shall be subject to inspection by the Department after the Contractor is satisfied that it has been completely and correctly fixed. The amount of notice given by the Contractor to the Department before concreting commences that reinforcement is ready for his inspection shall be agreed between the Department and the Contractor at the commencement of the Contract.

**FORM WORK**

**Design**: — Formwork shall be so designed and constructed by the Contractor that the concrete can be properly placed and compacted and that the required shapes, finishes, positions, levels and dimensions shown on the working drawings are maintained, subject to the tolerances given in the Specification for Tolerances. Unless otherwise directed by the Department, all formwork to beams and slabs shall be evenly cambered, unless otherwise specified or shown on the drawings, to the mid-point of the span of the member at the rate of 2mm per metre of span, all to the approval of the Department and the full cross section of the member shall be maintained after placing of concrete.

The formwork and joints shall be capable of resisting the dead load and pressure of the wet concrete, effect of vibration equipment, wind forces and all other superimposed loads and forces it is necessary for it to carry. Should it be necessary to support formwork off suspended or ground bearing slabs, the manner of execution of the support shall be agreed with the Department so that overstress of, or damage to, those members is prevented.

In structures having, in whole or part, two or more reinforced concrete floors, props to the approval of the Department shall be provided under the soffits of beams and slabs of any floor which is being used to support the formwork and new concrete of the floor above. These props shall not be removed until the formwork for the new concrete has been struck.

Wedges and clamps shall be used in preference to nails. Joints in forms shall be tight enough to prevent leakage of cement paste.

**Finish**: — The quality of the finished surface of the concrete shall be as shown on the working drawings or as otherwise specified, and the type of formwork used shall be adequate to provide such finishes.

**Ties**: — The type of ties used and their position shall be such that the finish required in terms of the clause "Finish" is achieved. Tie rods are preferable to wire ties and the forms shall not be secured to the reinforcement. No corrodible tie rod or wire tie shall be allowed within the depth of concrete cover, and in the case of water-retaining or tanked structures, no removable tie rod or wire shall pass right through the concrete member.

**Preparation of Formwork:** — Surfaces that are to be in contact with fresh (wet) concrete shall be so treated by coating with a non-staining mineral oil or other approved material, or, in the case of timber forms, by thoroughly wetting surfaces so as to ensure easy release and non-adhesion to formwork during stripping. If any substance other than water is used, every precaution shall be taken to avoid contamination of the reinforcement.

**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 without unduly damaging the surfaces of the formwork.

**Openings**: — Where necessary for the proper placing of the concrete, temporary openings for cleaning, inspection or placing purposes shall be provided, taking cognisance of the finishes specified.

**Removal of Formwork**: — Formwork shall not be removed before the concrete has attained sufficient strength to support its own mass and any loads that may be imposed on it. Except where the Contractor can prove by means of cube tests, at his own expense to the satisfaction of the Department that, because of its strength development characteristics the concrete has attained sufficient strength and that shorter periods are practicable, formwork shall not be removed within shorter periods than those given in Table A. The number of cube tests required shall be equal to the number required for testing at 28 days. Where full design loads are carried, no soffit forms and props may be removed until the full design strength is attained. In structures having, in whole or part, two or more reinforced concrete floors, props to the approval of the Department shall be provided under the soffits of beams and slabs of any floor which is being used to support the formwork and concrete of the new floor above. These props shall not be removed until the formwork for the new concrete has been struck.

All formwork props shall have been removed from under beams and slabs before the commencement of construction of brickwork thereon, unless otherwise agreed with the Department. Formwork shall be removed carefully so that shock and damage to the concrete are avoided.

**TABLE A—REMOVAL OF FORMWORK (MINIMUM TIMES IN DAYS (24 hrs))**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Type of structural member or formwork | Type of cement used | | | | | | | | |
| | Portland cement and Portland cement 15 | | | Rapid- hardening Portland cement* and rapid-hardening Portland cement 15 | | | Portland blast-furnace cement | | |
| | | | | Weather | | | | | |
| | Hot or normal | Cool | Cold | Hot or normal | Cool | Cold | Hot or normal | Cool | Cold |
| (a) Beam sides, walls, and unloaded columns. | 0,75 | + | 1,5 | 0,5 | + | 1 | 2 | + | 4 |
| (b) Slabs with props left underneath | 4 | + | 7 | 2 | + | 4 | 6 | + | 10 |
| (c) Beam soffits with props left underneath, and ribs of a ribbed floor construction | 7 | + | 12 | 3 | + | 5 | 10 | + | 17 |
| (d) Slab props including cantilevers | 10 | + | 17 | 5 | + | 9 | 10 | + | 17 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| (e) Beam props including cantilevers | 14 | + | 21 | 7 | + | 12 | 14 | + | 21 |

* Shorter periods may be used for sections of thickness 300mm or more.

\+ In cool weather, stripping times shall be determined by interpolation between the periods specified for normal and cold weather.

**CONCRETE QUALITY**

**General**: — Concrete shall comply with the requirements for "Strength Concrete" as specified. The type of aggregate and cement, and their sources of supply, shall not be altered during the currency of the Contract without the prior written agreement of or instruction from the Department.

**Strength Concrete:** — The Contractor shall be responsible for the design of the concrete mix and for the proportions of its constituent materials, measured as described, necessary to produce concrete that complies with the requirements specified by the Department thus:-

a) For each section of the work, the class of concrete and position on the Works, as shown on the drawings:

b) For each class of concrete:

i) the minimum compressive strength at 28 days as shown in Table B

iii) the stump as shown in Table D

iv) the maximum cement/water ratios as shown in Table C.

At the earliest possible stage in the Contract, at least 35 (thirty-five) days before the first concrete is placed, or as otherwise agreed with the Department, the Contractor shall submit samples of the aggregates which he proposes to use on the works to the Department.

The Contractor, under the supervision of the Department, shall prepare trial mixes using these same aggregates, to establish his ability to achieve the strengths specified, and satisfactory workability of the concrete. The Contractor shall provide all necessary equipment for, and carry out tests of moisture content of aggregates at the time of preparation of the trial mixes, tests of the slump of the mixes and at the same time cast not less than six standard cubes from each mix for compression tests.

The target strengths to be achieved under trial mix procedure shall exceed the specified minimum compressive strengths by a factor which is acceptable to the Department.

The Contractor shall also, when required to do so, prove the concrete yield obtained per sack of cement by suitable measurement of batches after placing.

No structural concrete work shall be poured until trial mix procedure has been properly followed and satisfactory 7 (seven) day compression strengths achieved. (Equivalent 28 (twenty-eight) day strength = 4/3 x 7 day strength + 5 MPA).

Thereafter, the materials, preparation of and method of manufacture of subsequent concrete shall conform accurately to those used in the trial mixes. If materials vary in the course of the Contract from the samples first submitted, the Contractor shall, on the instructions of the Department, repeat the trial mix procedure and vary the proportions to attain the specified qualities.

The costs of preparation of trial mixes, with tests associated with them, shall be borne by the Contractor and must be allowed for in the pricing of the concrete.

A valid concrete test result shall be the average obtained from the testing of three test cubes of concrete in accordance with SANS Method 863.

**TABLE B—CONCRETE CLASSES: STRENGTH, AGGREGATE SIZE AND COMPACTION**

| Class | Minimum 28 day cube compressive strength (MPA) | Maximum nominal size of coarse aggregate (mm) | Method of Compaction |
|---|---|---|---|
| 50/26<br>50/19 | 50 | 26,5<br>19,0 | |
| 45/26<br>45/19 | 45 | 26,5<br>19,0 | |
| 40/26<br>40/19 | 40 | 26.5<br>19,0 | |
| 35/26<br>35/19 | 35 | 26,5<br>19,0 | |

| | | | |
|---|---|---|---|
| 30/37<br>30/26<br>30/19<br>30/13 | 30 | 375<br>26,5<br>19,0<br>13,2 | Mechanical (see clause “Compaction”) |
| 25/37<br>25/26<br>25/19<br>25/13 | 25 | 37,5<br>26,5<br>19,0<br>13.2 | |
| 20/37<br>20/26<br>20/19<br>20/13 | 20 | 37,5<br>26,5<br>19,0<br>13,2 | |
| 15/37<br>15/26<br>15/19 | 15 | 37,5<br>26,5<br>19,0 | Non-mechanical (See clause “Compaction”) |
| 10/37<br>10/26<br>10/19 | 10 | 37,5<br>26,5<br>19,0 | |

The Contractor shall be deemed to have satisfied himself, before tendering, of his ability to produce concrete of the required quality with available materials conforming to the specification, and mixed in the proportions on which his tendered rates are based. Any subsequent alterations of the mix proportions to meet these requirements shall be at the Contractors expense.

If, in the opinion of the Department, the concrete proportions are likely to lead to excessive segregation, honeycombing, bleeding or shrinkage cracking, he shall have the right to order the Contractor to amend the proportions at the Contractors own cost.

**TABLE C — MAXIMUM CEMENT / WATER RATIOS FOR DIFFERENT CONDITIONS OF EXPOSURE**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| **Type of structure** | **Exposure Conditions** | | | |
| | **Mild** | **Moderate** | **Severe** | **Very Severe** |
| Thin sections; reinforced piles; all sections with less than 25mm cover reinforcement. | * | 0.53 | 0.48 | 0.40 |
| Moderate sections; retaining walls, piers, beams | * | * | 0.53 | 0.43 |
| Exterior portions of mass concrete | * | * | 0.53 | 0.43 |
| Concrete slabs laid on ground | * | 0.53 | 0.48 | * |
| Concrete protected from the weather, inside buildings, or in ground below frost level | * | * | | * |

* In these cases the ratio will be based on the strength for the workability desired.

**Consistency and Workability**: — Slump measurements taken in accordance with SANS Method 862 shall be within the limits given in Table D appropriate to the type of construction, or within such other limits as are laid down by the Department.

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

**TABLE D—SLUMP LIMITS**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Type of construction | Slump, mm | | | |
| | Non-mechanical compaction | | Mechanical compaction | |
| | Max. | mm. | Max. | mm |
| Paving and pre-cast units | 75 | 50 | 50 | 30 |
| Heavy mass construction | 75 | 25 | 50 | 20 |
| Reinforcing foundation walls and footings | 125 | 50 | 80 | 30 |
| Slabs, beams, columns, and reinforced walls | 125 | 50 | 80 | 30 |

| | | | | |
|---|---|---|---|---|
| Slabs and industrial floors on ground | 125 | 75 | 80 | 50 |
| Plain footings, caissons, and substructure walls | 100 | 25 | 60 | 20 |

**Ready-mixed Concrete:** — This may be used subject to the approval of the Department. This approval may be withdrawn on 24 (twenty-four) hours notice to the Contractor if at any time if documents do not conform to the requirements of this Specification. Ready-mixed
concrete shall also comply with the requirements of SANS Specification 878. Details of the

mix ingredients and tests thereon, the mix designs and relevant tests shall be forwarded to the Department for his approval. Ready-mixed concrete shall be cast within 3 (three) hours of placing all the ingredients in the mixing plant. Ready-mixed concrete shall be subject to the same sampling and testing at the site as that mixed on site and only the results of these tests will be regarded as valid.

**TRANSPORTATION AND PLACING**

**Transportation**: — Unless agreed with the Department, concrete shall not be pumped into its final position. The Contractor must provide suitable runways for the distribution of concrete to the various parts of the structure and these must be solidly constructed in such a manner so as to obviate the possibility of interference with the steel reinforcement.

**Placing**: — Unless otherwise agreed with the Department, the Contractor shall give the Department at least 24 (twenty-four) hours notice of his intention to place concrete. No concrete shall be placed without the prior approval of the Department and without a representative of the Department being present. Concrete shall be placed within one hour of the time of its discharge from the mixer. Concrete shall not be re-tempered by the addition of water or 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 surface against which concrete is to be placed. Wherever possible, the concrete shall be deposited directly into its final position to avoid segregation and displacement of reinforcement and other items that are to be embedded. 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 450mm and heaping shall be avoided.

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. Concrete shall not be allowed to fall freely through a height of more than 3 m, unless otherwise approved. Concrete shall not be placed during periods of heavy or prolonged rainfall.

**Compaction**: — The concrete shall be fully compacted by approved means during and immediately after placing. It shall be thoroughly worked against the formwork and around reinforcement and other embedded fittings without displacing them.

The concrete shall be free of honeycombing and planes of weakness. Successive layers of the same lift shall be thoroughly worked together.

The method of compaction shall be as specified. Mechanical compaction shall be undertaken by means of high frequency immersion vibrators of minimum frequency of 6000 vibrations per minute and a maximum acceleration of 4 g when under load, being capable of visibly affecting concrete over a radius of at least 500mm. Vibrators shall be inserted at about 500mm centres and withdrawn slowly to close the hole formed by the vibrator.

Non-mechanical compaction shall be undertaken by means of spading, rodding or forking.

Over-compaction resulting in segregation, surface laitance or leakage (or any combination of these) shall not be allowed.

Vibrators shall not be allowed to come within 30mm of the face of the formwork in the case of formed finishes, nor within 75mm of the face of the formwork in the case of special finishes.

**Construction Joints:** — Concreting shall be carried out continuously up to the construction joints shown on the working drawings or as prior approved by the Department, except that

if, because of an emergency (such as a breakdown of the mixing plant or the occurrence of unsuitable weather), concreting has to be interrupted a construction joint shall be formed at the place of stoppage in conformity with the detail shown on the drawings for construction joints generally and in the manner which will least impair the durability, appearance and proper functioning of the concrete. The Department shall approve the method adopted for forming the construction joints, one of the following methods being adopted, as relevant: —

a) Construction joints when concrete is not more than 24h 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 when concrete is more than 24h 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 10mm 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 when concrete is more than 3 days old: — The procedure specified in (b) above shall be followed, except that the old surface shall be prepared and kept continuously wet for at least 24h before the mortar and new concrete are placed.

d) Construction joints at tops of columns: — The procedure for brushing or cleaning specified in (a) or (b) above, as applicable, shall be followed before the steel reinforcement of the slab or floor to be cast on the columns is placed in position.

**Curing and protection**: — Formwork shall be retained in position for the appropriate period given in the clause “Removal of Formwork” and shall be considered as providing adequate curing on those surfaces for that period. Should this curing period still be less than that specified, alternatively, should surfaces not be cured by forms then all such concrete shall immediately 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, except where atmospheric temperatures are low, i.e., less than 2°C,

b) covering the concrete with sand, or mats made of a moisture-retaining material, and keeping the covering continuously wet;

c) continuous spraying of the exposed surfaces with water;

d) covering with a waterproof or plastic sheeting firmly anchored at the edges,

e) using a prior approved curing compound applied in accordance with the manufacturer’s instructions, provided that in this case, the presence of the compound is not detrimental to subsequently applied finishes.

Whatever method of curing is adopted, its application shall not cause staining, contamination, or marring of the surface of the concrete.

The curing period shall be at least 5 days for concrete made with Portland cement, at least 2 days for that made with rapid-hardening Portland cement and at least 7 days if Portland blast-furnace cement is used. When atmospheric temperatures are below 5° C these minimum curing periods shall be extended by 72, 36 and 72 hours respectively.

**CONSTRUCTION DETAILS**

**Holes, Chases and Fixing Blocks:** — No holes or chases other than those shown on the working drawings or approved by the Department shall be cut or otherwise formed in the concrete. No blocks for the attachment of fixtures shall be embedded in the concrete unless approved by the Department.

**Pipes and Conduits**: — No pipes or conduits other than those shown on the working drawings shall be embedded in the concrete without the approval of the Department. The clear space between any such pipes and the clear distance between such-a pipe and any reinforcement shall be at least 25mm or the maximum size of the coarse aggregate plus 5mm, whichever is greater. The amount of concrete cover over pipes and fittings shall be
at least 25mm.

**Honeycombing and Other Defects**: — After removal of the forms, if the concrete shows any defect in terms of the Specification for Finishes for that concrete, the Contractor shall, on the instructions of the Department, make good the defect at his own cost, by either removing and replacing the defective concrete, or by patching, all as approved by the Department and to the standard of finish required. No remedial work shall be carried out by the Contractor without the prior approval of the Department.

**Building on Concrete Footings:** — No structural load shall be imposed on concrete footings until at least three days after depositing the concrete in the case of mass concrete footings and after seven days in the case of reinforced concrete footings, or as may be directed by the Department.

**RECORDS: —**The Contractor shall maintain written records indicating: —

a) the date on which each section was concreted, the time taken to place the concrete, and the position of that section in the Works and its construction joints;

b) daily weather conditions with temperatures being recorded by maximum and minimum thermometers and

c) the nature of samples and dates on which they were taken. In the case of cubes these shall also state the identification marks, test results and age, minimum strength required and position of parent concrete.

**TESTS**

**Compressive Strength:** — During the time in which each class of concrete, having a specified 28 day compressive strength equal to or greater than 20 MPA, is being placed, samples of the concrete shall be taken from the point of deposit at the rate of at least one sample from each 5m³ of concrete placed in columns, and from each 30 m³ or part thereof of concrete placed elsewhere, but in either case, nevertheless at least once a week. A group of at least three 150mm test cubes shall be made from each sample for testing at 28 days age. If the Contractor plans to execute further work which relies on previously completed work for support but for which the results of 28 day tests are not available, he is to prove the strength of that concrete by taking and testing at 7 days age an equal number of test cubes to that which is to be tested at 28 days age, prior to the commencement of the planned further work.

The cost of the necessary extra test cubes and testing will be for the Contractor's account. Each group of test cubes shall be deemed to represent the whole of the concrete from which sample was taken and shall be identifiable with the concrete.

The Contractor shall provide, at his own expense, sufficient moulds to keep pace with the rate of concreting. He shall also perform all tasks in respect of compressive strength testing except the actual crushing.

If ready-mixed concrete is used, site testing as specified herein shall still be undertaken, and only the results of such site testing shall be considered in determining the acceptance or otherwise of the concrete.

**Grading Analysis**: — If so directed by the Department, a grading analysis shall be made for each 40m³ of fine aggregate to be used and for each *75* m³ of the coarse aggregate to be used. The analysis shall be made by the method given in SANS Specification 1083.

**Determination of Consistency**: — When the slump test is used to measure the consistency of the concrete mix, it shall be carried out by the method given in SANS Method 862 with samples taken in accordance with SANS Method 861.

**Costs of Tests**: — to concrete, trial mixes, cement, aggregates, water and reinforcing steel shall be borne by the Contractor. The Contractor shall also bear the costs of any other tests (including load tests), which are required as a result of failure on the part of the Contractor to meet the requirements of the Specification.

An item against which the Contractor may allow for all costs in connection with tests on concrete cubes has been included elsewhere in these Bills of Quantities.

**Testing Authority**: — The crushing of cubes and testing of other samples except in the case of the clause "Determination of Consistency" shall be undertaken by an independent Authority as approved by the Department. The Contractor shall arrange with the Authority that copies of the results of all tests are sent direct to the Department.

**ACCEPTANCE CRITERIA FOR STRENGTH OF CONCRETE: —** Should any test result obtained from a set of three test cubes of concrete of a specific grade that have been made and tested as specified show that the strength is more than 3 MPA below the specified strength, the concrete represented by such results shall be deemed to have failed to meet the Specification. Should an examination carried out in terms of the clause "Procedure in the event of failure" satisfy the Department that the structural adequacy and durability of that part of the structure where the concrete concerned has been used, is not impaired, the concrete will be acceptable. The Contractor will however be required to review the mix design and any other factors influencing the quality to ensure that further concrete is acceptable.

Where three or more consecutive valid test results (i.e., results of sets of three test cubes that have been made and tested as specified) become available, the following criteria shall apply: —

a) The average of any three consecutive valid test results obtained on concrete of a specific grade must exceed the specified strength by at least 2 MPA.

b) If the criterion given in (a) above is not met but the average is at least equal to the specified strength, the concrete cast will be acceptable but the Contractor will be required to adjust the mix design and standard of control.

c) Should the average result be less than the specified strength, an examination must be carried out in terms of the clause "Procedure in the event of failure" on that part of the structure in which concrete represented by the result has been used.

Alternatively, should a concreting operation be of such size or the testing be of such frequency that thirty or more valid test results (i.e., results of sets of three test cubes that have been made and tested as specified) become available within three months, the Contractor may choose, subject to the approval of the Department, to have the results assessed statistically. In such a case, the average of all the test results of a specific trade of concrete at *any stage* must exceed the specified strength by at least 1,7 standard deviations, failing which the Contractor will be required to adjust the mix design to ensure compliance with this criterion.

**PROCEDURE IN THE EVENT OF FAILURE:** — If after the evaluation of the test results in terms of the clause "Acceptance criteria for strength concrete" an examination of the concrete in the structure is necessary, one or more of the following procedures in the sequence given may be adopted at the discretion of the Department, and for the account of the Contractor, to determine the acceptability or otherwise of the concrete in that particular part of the structure: —

a) An assessment of the stress level in the structure concerned in relation to the test result obtained.

b) Non-destructive testing, subject to the availability of similar concrete of proven acceptable quality in comparable members in the same construction as a reference.

c) The testing of drilled cores in accordance with the relevant SANS Standard Methods.

d) Full scale load tests in accordance with Section 6 of SANS Code of Practice 0100: Part II.

Where load tests are, in the opinion of the Department, unsuitable or impracticable, and if an examination carried out in terms of the above does not show the concrete strength

to be acceptable, or if a tested portion of the structure fails to pass the tests, the Contractor shall, on the instructions of the Department, replace or strengthen by approved means: —

a) each portion that failed or contains concrete that failed, as relevant, and

b) any other portion, irrespective of strength, the functional purpose of which is affected by the portion or concrete referred to in (a) above.

**NON-STRUCTURAL PRESCRIBED MIX CONCRETE:** — Concrete for non-structural purposes shall be "Prescribed mix concrete" produced in accordance with the requirements indicated in the table below, and the Contractor is also referred to the foregoing Preambles insofar as they apply: —

**TABLE E – PRESCRIBED MIX CONCRETE FOR NON-STRUCTURAL PURPOSES**

| Class of Concrete | Estimated minimum compressive strength in MPA at 28 days | Maximum nominal size of coarse aggregate in mm | Proportion of Constituents | | |
|---|---|---|---|---|---|
| | | | Cement (Parts) | Fine Aggregate (Parts) | Coarse Aggregate (Parts) |

| | | | | | |
|---|---|---|---|---|---|
| A B C | 1<br>15<br>20 | 37,5<br>19,0<br>19,0 | 1<br>1<br>1 | 4<br>3<br>2 ½ | 8<br>5<br>3 ½ |

Cement and aggregates shall be mixed by volume and the contents of a 50 kg sack of cement shall be taken to be 0.033 $m^3$

The cement / water ratios and the maximum and minimum slumps for concrete shall be as previously listed in Tables C and D.

The Department shall have the right to vary the proportions of the constituents in any of the prescribed mixes as necessary to obtain the required compressive strength, optimum density and workability of the concrete. Any variation in the rates of the concrete will only be considered if the proportion of cement to the total volume of aggregate, in each case, is varied from that Specified.

Notwithstanding any requirements previously described, the Department may permit certain items of non-structural concrete in small quantities to be mixed by hand.

Where concrete is mixed by hand, the coarse aggregate shall be spread out on a timber, concrete or metal platform in a flat heap, the sand-then spread evenly over the heap, followed by the cement also spread evenly, and the whole thoroughly mixed by shovelling from the centre to the side to form a ring, then back to the centre and again to the side. Water shall then be poured into the ring and the materials mixed into it and then back into the ring, the remainder of the water then added slowly as materials are mixed into it. Mixing shall continue until the colour is uniform and the consistency the same throughout the pile.

**"NO-FINES" CONCRETE**: — shall consist of one part of cement to eight parts of 19mm aggregate (1:8— 19mm stone) with a water/cement ratio of approximately 0, 46. This water/cement ratio may be varied slightly to suit conditions on approval by the Department.

The quantity of water used shall be just sufficient to form a smooth grout, which shall completely coat every particle of aggregate, and also to ensure that the grout is just wet enough to form a small fillet at each point of contact between the stones. 'No-fines" concrete mixed with excessive water, which results in a thin grout which drops off the aggregate, will be rejected.

"No-fines" concrete shall be placed in its final position within 20 minutes of mixing and shall be placed in continuous horizontal layers. "No-fines" concrete shall be spade worked sufficiently to ensure that it fills the forms but vibrating, tampering or ramming will not be permitted.

**BREEZE CONCRETE:** — shall consists of one part cement to eight parts clean dry furnace ashes, the ashes being free from all coal or other foreign matter and graded up to particles which will pass a 26. 5mm ring from a minimum which passes a 4.75mm mesh. The finer materials from the screening to be first mixed with the cement into the mortar and the ashes added afterwards and thoroughly incorporated. The breeze concrete is to be mixed in batches not exceeding 0, 1 in 3 and each batch is to be immediately placed in position. The ashes for breeze concrete are to be obtained in an unscreened state and are to be kept dry so that sufficient fine material will be obtained from the screening to make the mortar.

**FINISHES TO IN-SITU CONCRETE**

**Formed Finishes**: — are the concrete surface finishes developed using formwork and whose standard of finish in each class shall be as described.

The Department shall be informed by the Contractor of any defect in terms of this Specification, and no remedial work shall be carried out by the Contractor without the prior approval of the Department. Any defect shall be made good at the Contractor's expense by either removing and replacing the defective concrete, or, in certain instances only, by patching, all as approved by the Department and to the standard of finish required.

**Class F1 Ordinary Finish**: — Formwork panels shall be of such quality that upon removal, the concrete is true and even, free from fins and recesses greater than 5mm size, honeycombing, large air holes and the like. Bolt holes shall be filled if so required by the Department.

**Class F2 Smooth Finish**: —This class of finish requires a high standard of concrete work, formwork and technique.

Concrete placed in any one structure to give this finish shall be made from cement and aggregates from the same source, and similarly, the grading of the aggregate shall be kept constant.

Formwork shall be metal or wrot timber in a new condition designed and constructed to suit the particular job in hand and with shutter bolts and joints between panes in a pattern approved by the Department.

Joints between panels shall be watertight, but the use of sealing tape, which marks the concrete, shall not be permitted.

Construction joints shall be in the position and of the detail shown upon the working drawings. Should the Contractor wish to incorporate further construction joints or amend the position of those shown to suit his own requirements or technique, this may be allowed provided that all design considerations are met.

his own requirements or technique, this may be allowed provided that all design considerations are met, that the prior approval of the Department is obtained and that any extra costs are borne by the Contractor. In the case of horizontal construction joints, the top edge of the concrete on the Class F2 smooth finish side is to be struck true and level with a trowel.

Special care shall be taken to ensure that forms are clean of all pieces of tying wire, nails and other debris at the time of concreting.

The standard of finish shall be such that, upon removal of the formwork, no further treatment, other than treatment of bolt holes if required shall be found necessary to provide a straight, smooth and uniform finish of good quality and consistent colour and texture, free of all honeycombing and large air holes.

**UNFORMED FINISHES**: — are those concrete surface finishes developed without the use of formwork -

**Class U1 Ordinary Finish**: — Immediately after placing, the concrete shall be finished by screeding with the edge of a wooden board of straight and true line and working between guides set accurately to level. No mortar shall be added and noticeable surface irregularities caused by the displacement of coarse aggregate shall be made good by re- screeding after removing or tamping down the offending aggregate.

**Class U2 Wood Float Finish**: — The concrete surface shall first be brought to the standard Class U1 ordinary finish and then floated with a wood float. Floating shall be started as soon as the screeded finish is stiffened sufficiently and the bleed water has evaporated or been removed and it shall be the minimum necessary to produce a surface free from screed marks and uniform in texture.

**Class U3 Steel Trowel Finish**: — The concrete surface shall first be brought to the standard of Class U2 wood float finish with floating being continued until a small amount of mortar without excess water is brought to the surface and then when the floated surface has hardened sufficiently to prevent any more excess fine material from being drawn to the surface, troweling with a steel trowel. Troweling shall be performed with firm pressure such as will flatten the sandy texture of the floated surface and produce a dense uniform surface free from blemishes and trowel marks. Gradual surface irregularities shall not exceed 5mm over any 3m. The sprinkling of sand and/or neat cement on the surface to absorb excess moisture shall not be permitted.

**Class U4 Power Float Finish**: — The concrete surface shall first be brought to the standard of Class U1 ordinary finish using wooden screeding boards or steel rollers. After evaporation or removal of all bleed water and immediately the concrete is stiff enough to support the machine the surface shall be closed with a mechanical power float and then finished with a mechanical power trowel. The texture of the finished surface shall be either non-slip or polished as shown on the drawings. Irregularities shall be of long wavelength not exceeding a curvature of 2mm in 600mm. Under no circumstances shall sand and/or neat cement be sprinkled over the surface either to absorb excess moisture or to fill surface blemishes or irregularities. Power floats and trowels shall be operated by skilled operators.

**TOLERANCES**: — Clause 6 of SANS Specification 1200G refers. Unless otherwise agreed by the Department, 'Degree of Accuracy' shall apply to all concrete work and steel reinforcing.

**SUPERVISION**: — The construction of all concrete work shall, at all times, be under the supervision of a competent person experienced in the production and placing of high-grade concrete. He shall personally supervise all work relating to the concrete construction and pay special regard to: —

a) The quality, testing and mixing of materials.
b) The finish, stability and cleanliness of formwork and excavations.
c) The cleanliness, correct positioning and maintenance in position of steel reinforcement.

c) The cleanliness, correct positioning and maintenance in position of steel reinforcement.
d) The transporting, placing, compacting and curing of the concrete. The construction and stripping of formwork.
e) The production of samples, test cubes, slump and other tests.

**GENERAL**

**Measurement and Payment**: — The provisions of Clause 8 of SANS Specification 1200G will NOT apply and the system of measurement that is adopted in these Bills of Quantities is the only system of measurement that will be recognised in this Contract.

No deductions have been made for pipes not exceeding 200mm internal diameter, reinforcement, conduits, structural steel, bolts and the like.

**Rates for Concrete**: — are to include for mixing, handling and depositing (by hoisting or lowering) in the forms. Rates for items of reinforced concrete are to include for thoroughly working and packing around the steel reinforcement. All reinforcement, except where otherwise described, has been measured separately.

Rates for concrete surface beds are to include for laying in suitable size panels not exceeding 20m$^2$ or as may be directed. The Contractor is to allow in his pricing of the concrete for all construction joints.

**Striking off and Curing**: — of concrete slabs and surface beds has been measured separately. The rates for all other items of concrete including stairs and landings and concrete bindings, are, except where otherwise described, to include for all necessary striking off of surfaces and curing.

The rates for items of striking off and curing top surfaces of concrete shall, unless otherwise described, apply to level surfaces.

Where exposed sloping surfaces of concrete do not exceed the limits of pitches laid down for the measurement of back shuttering, the striking off and curing of the sloping top surfaces has been measured in the case of concrete slabs and surface beds, and in other- cases provision has been made for dressing the concrete surfaces to splay.

Where items of striking off and curing are described as to falls or ramps this shall include cross-falls, etc.

The rates for striking off and curing of surface beds formed in panels must also include for all necessary temporary formwork in forming the panels.

**Rates for Formwork**: — are to be for use and waste only (except where described as “permanent”) and are to include for fitting together in the required forms, propping, strutting, shoring, wedging, plumbing and fixing to true angles and surfaces, cambering formwork to slabs and beams where required, preparation and treatment of surfaces as necessary to ensure easy release during stripping, reconditioning as necessary before re-use, providing necessary temporary openings for the purpose of cleaning, inspection and placing of concrete, and for all straight cutting, splayed edges, intersections, notching and narrow widths, including waste and properly fitting at intersections, maintaining in position for periods as directed and for striking and removing.

Rates for items of formwork to soffits of slabs and to sides and soffits of beams, lintels and the like are to include for horsing exceeding 1,5m and not exceeding 4,5m high unless otherwise stated in the items.

Rates for formwork to soffits of stairs and landings are to include for all necessary horsing.

**Rates for Permanent Formwork**: — are to include for leaving in all formwork, props, etc. as permanent formwork shall be regarded as not being recoverable.

**Rates for Steel Fabric Reinforcement:** — are to include for lapping the reinforcement at all edges, as specified, for all cutting and waste, notching, etc. bending where required, wiring together at laps and for maintaining in position during placing of concrete.

**Rates for Steel Bar Reinforcement**: — are to include for all cutting, bending, hooked ends, wiring together at passing points, hoisting or lowering to the required levels, fixing in accordance with the detail drawings, cover blocks and maintaining in position during placing of concrete. The mass of mild and high yield stress steel bars shall be based

and maintaining in position during placing of concrete. The mass of mild and high yield stress steel bars shall be based on the values shown in Table EI of SANS Specification 920— Appendix E (with no allowance being made for rolling margin and waste).

The mass of the binding wire required for fastening the reinforcement together is not included in the mass of the reinforcement. Provision for the cost of this wire shall be deemed to have been made by the Contractor in calculating the unit rate for the net mass (i.e. excluding the mass of binding wire) of the reinforcement.

**4. BRICKWORK**

**SAND**: — shall comply with the requirements of SANS Specification 1090, washed where necessary and screened through a 2360 micrometer mesh sieve.

**CEMENT**: — shall be Portland cement of normal setting quality complying with SANS

Specification 471 or Portland cement 15 complying with SANS specification 831. Cement containing more than 15 % blast furnace slag will not be permitted to be used.

**LIME**: — shall be hydrated lime complying with SANS Specification 523.

**WATER**: — shall be clean and free from injurious amounts of acids, alkalis, and other organic substances. If so required by the Department, the suitability of the water shall be proved by tests carried out by an approved laboratory.

**CEMENT MORTAR**: — unless otherwise described, shall be composed of one part by volume of cement to five parts by volume of sand.

**COMPO MORTAR**: — unless otherwise described, shall be composed of one part by volume of cement, one part by volume of lime to ten parts by volume of sand.

**STRENGTH MORTAR**: —where required, shall be of the class specified and as defined in Table C-l of SANS Code of Practice 0164—Part I.

**MIXING OF MORTAR:** — the materials are to be mixed dry on a non-absorbent and close jointed timber or iron platform until the mixture is of uniform colour with water added and the mixture turned over until the ingredients are thoroughly incorporated.

No cement mortar that has once commenced to set will be allowed to be used. Mixing platforms are to be cleaned and old mortar removed before any new batch of mortar is prepared for mixing. No mortar mixing by adding additional materials is permitted after 5 (five) hours.

**TESTING OF STRENGTH MORTAR**: — During the time brickwork is being laid samples shall be taken of the mortar being used as shall be directed by the Department. A group of three 70mm x 70mm x 70mm test cubes shall be made from each sample for testing at 28 days of age. Each group test cubes shall be deemed to represent the whole of the batch from which the sample was taken and shall be identifiable with the batch.

The testing shall be undertaken by an independent firm or institution nominated by the Contractor to the approval of the Department. An item for the testing of mortar cubes has been provided elsewhere in these Bills of Quantities.

**BURNT CLAY COMMON BRICKS**: — shall comply with SANS Specification 227 and are to be good quality, sound, hard, well burnt bricks, uniform in size and shape.

A sample load of bricks is to be approved by the Department and all subsequent loads are to be equal thereto.

**BRICKS FOR FOUNDATIONS**: — are to be as above but extra hard burnt bricks

**BRICKS FOR FOUNDATIONS**: — are to be as above but extra hard burnt bricks.
Reject facing bricks may be used in lieu of extra hard burnt foundation bricks provided they are equal to a sample to be submitted to and approved by the Department. These bricks are also to be used for septic tank walls.
**BRICKWORK**: —unless otherwise described is to be in burnt clay common bricks and wherever practicable is to be in stretcher bond with the skins tied together with and including galvanized crimped wire wall ties in accordance with SANS Specification 28. The wire ties are to be of sufficient length to allow each end to be built into brickwork built into every fourth course and spaced at 450mm staggered centres (seven ties per square metre). The bricks are to be well wetted before being laid and the course of bricks laid last is to be well wetted before bedding the next course of bricks upon it. The brickwork is to have all perpends flushed up solid and each course is to be laid on a solid bed of mortar. No false headers are to be used. Whole bricks are to be used except where bats or closers are legitimately required to form bond.
Unless otherwise described one brick walls are taken at a nominal thickness of 230mm.

The joints of all walls to be plastered are to be raked out as the work proceeds to form key for plaster. All walls are to be carried up regularly so that no part is built more than 1,2m higher than the adjoining walls.
Mortar joints generally are not to exceed 10mm thickness unless otherwise indicated on the drawings. If a specific brick scale is indicated on the drawings, either drawn or written, it must be adhered to.
Solid bricks to X-Ray Room walls are to be used. If hollow core bricks are used, these are to be grouted up solid.
**HOLLOW WALLS**: — are to be formed of two thicknesses of brickwork as specified with cavity between, tied together, unless otherwise specified, with and including A.I.S.I. Type 304 stainless steel wire butterfly type wall ties in accordance with SANS Specification 23, of sufficient length to allow each end to be built into brickwork, built into every fourth course and spaced at 450mm staggered centres (seven ties per square metre). Cavities are to be kept clear of all rubbish, mortar droppings and projecting mortar.
**BRICK LININGS TO CONCRETE**: — unless otherwise described are to be tied to concrete with and including A.I.S.I. Type 304 stainless steel wire wall ties complying with SANS Specification 28 with one end embedded is to deep into concrete and other end built into the brick joints and spaced not less than seven ties per square metre.
**REINFORCED BRICK LINTELS:** — unless otherwise detailed are to be constructed in accordance with KZN Public Works Type Drawing.
**PRE-CAST AND PRE-STRESSED CONCRETE LINTELS**: — where specified, are to be of approved manufacture and the Contractor is to provide the Department with a certificate issued by the manufacturer certifying that the lintels are adequate for the purpose in terms of span, loading and number of courses and construction of brickwork above the lintel. The manufacturer is also to specify the minimum bearing required at each bearing end and the nature and period of temporary propping required. Rates or pre-cast pre-stressed concrete lintels are to include for any cement mortar filling required and for temporary propping in accordance with the manufacturer's instructions.
**BAGGING DOWN BRICKWORK: —** shall be carried out when the mortar in joints is still soft by rubbing over with wet rough sacking until all joints and crevices are evenly filled, including additional mortar if necessary to obtain an even surface or, when the mortar in joints is set, by rubbing over as described but including cement grout as necessary to fill up the joints and crevices.
**CRAMPS:** — for timber door frames shall be 1.6mm thick galvanized hoop iron 32mm wide with one end

turned up 50mm and twice screwed to stile of frame and built 450mm deep into wall with other end turned up into brick joint and cranked as necessary where built into cavity wall. Cramps shall be built in approximately 330mm from top and bottom of stile and intermediately at not exceeding 825mm.

**TIES TO WALL PLATES, RAFTERS, ETC.**: — shall be 1.6mm thick galvanized hoop iron 32mm wide and at least 1500mm long with one end turned up and built in not less than ten courses deep into brickwork or embedded in concrete beams or slab and with end left projecting and wrapped around timber rafter and spiked to timber wall plate. Where ties are embedded to concrete beam or slab, they must be wrapped around the bottom steel bar reinforcement of the beam or slab.

**WELDED MESH BRICK REINFORCEMENT**: — shall be 55mm, 80mm, 155mm or 235mm wide consisting of two 3.55mm main high tensile steel wires at 50mm, 75mm, 150mm or 230mm centres respectively with 2.80mm high tensile-steel cross wires electrically welded at 300mm centres, lapped 150mm at end joints, 75mm at angles and built 110mm into connecting walls. No allowance has been made for laps.

**BITUMEN EMULSION WATERPROOFING TO BRICKWORK**: — The inner thickness of external superstructure walls whether hollow or solid, behind facing bricks, is to be bagged and painted with two coats of approved bitumen emulsion waterproofing compound.

**FACING BRICKS. PAVING BRICKS, QUARRY TILES, ETC.**: — Facing bricks shall comply with SANS specification 227. Facing bricks, paving bricks, quarry tiles, terra cotta grille blocks, etc. are to be of the types and colours specified, specially selected, free from blemishes, square on all faces, uniform in size, shape and colour and equal to a sample to be deposited with and approved by the Department.
Special care must be taken to preserve the arrases and faces of facing bricks, paving bricks, quarry tiles, etc. during transit and handling.

**FACED BRICKWORK**: — Facing bricks shall be sorted to ensure proper mixing of the bricks within the colour range of each type of facing bricks. Sudden changes in the general colour of faced brickwork in any one type of facing brick will not be acceptable. Sand used in mortar for faced brickwork is to be clean washed sand and sand from the same source is to be used throughout to maintain a uniform appearance. Faced brickwork is to be pointed as specified as the work proceeds. Keyed-in joints are to be formed with a round jointing tool and square recessed joints are to be approximately 6mm deep formed with a square jointing tool. All perpends are to be accurately kept. The bond is to be broken, if necessary, in the centre of panels above and below windows, above doors, between openings and in the centre of sides to piers. No broken bond will be allowed at reveals or quoins. All cutting to face bricks is to be done with a carborundum or other approved high- speed brick saw. Faced brickwork is to be protected from injury, mortar splashes, etc. and cleaned down with spirits of salts and scrubbed down with water at completion to the approval of the Department.

**PAVING BRICKS AND QUARRY TILES**: — unless otherwise described are to be pointed as the work proceeds with 6mm wide keyed-in joints. Paving bricks and quarry tile paving, sills, etc. are to be protected from injury, mortar splashes, etc. and cleaned down with spirits of salts and scrubbed down with water at completion to the approval of the Department.

**FIBRE CEMENT SILLS:** — are to be of approved manufacture without fixing lugs, even in shape, uniform in colour, free from cracks, twists and other defects, in single length between reveals and of the thickness and colour specified and equal to approved sample.

**RATES**

**Brickwork Generally**: — Rates for brickwork are to include for hacking the face, or raking out the joints, of brickwork where necessary to form key for plaster, etc. and for plumbing angles and surfaces, all square cutting, wedging and pinning against columns, beams, slabs, etc. for all waste in cutting and wire ties required in tying skins together as described.

Rates for hollow walls are to include in addition to the above for keeping the cavities clean and free of mortar droppings and for butterfly type wall ties, all as described.

Where items are described as cut and pinned, built in, bedded, wedged and pinned, etc. rates are to include for grouting in or bedding solid with 1:3 cement mortar, unless otherwise stated.

Where window units, etc. are described for building in as composite, rates are to include for assembling of units as required and, unless otherwise described, for tap screwing to coupling mullions or transoms, including holes:

**Faced Brickwork, etc.:** — Rates for all fair and faced brickwork, brick paving, grille block walls and the like are to include in addition to the foregoing for building or laying to true surfaces and angles, all fair square cutting and fitting and cleaning down to approval at completion.

Rates for brick sills, copings, steps, margins, thresholds and the like shall include for fair ends and angles unless different bricks or tiles are used or special cutting is required.

Rates for items described as “Extra over ordinary brickwork” are to be for the extra cost of the facing bricks specified over common brickwork built in stretcher bond, and are to include for building in cement mortar consisting of one part cement to five parts clean washed sand and for pointing as described.

Rates for items described as “Labour and Material” are to be for the full cost of the facing bricks specified, and otherwise as above described.

Rates for all cut face brick linings are to include for cutting and bonding at ends.

**Quarry Tiles**: —Rates are to include for all square cutting and fitting, bedding and jointing in cement mortar consisting of one part cement to three parts clean washed sand, for pointing as described as the work proceeds and cleaning down to approval at completion.

Rates for treads, sills, copings, cappings, skirtings etc. are to include for pointing to exposed edges, ends and projecting soffits.

**Air Bricks**: — Rates for air bricks and air vent, gratings are to include for forming openings through the walls, for all necessary jack arches and turning pieces, for plastering all round the openings in cement mortar, and where in hollow walls, for building cavity solid all round in addition.

**Fibre Cement Sills**: — Rates are to include for all square cutting, waste, and fitting and for bedding in an approved epoxy adhesive.

**Terra Cotta Grille Blocks:** — Rates are to include for all square cutting and waste and fitting, bedding and jointing in cement mortar consisting of one part cement to three parts clean washed sand and for pointing with keyed in joints on both faces and into reveals of openings as the work proceeds.

**5. <u>WATERPROOFING</u>**

**GENERAL**: — All measurements are nett — no allowance being made for laps in sheet materials or for waste in cutting.

**WORKMANSHIP**: — All work is to be carried out to the approval of the Department by skilled and qualified workmen and in accordance with the methods prescribed in SANS Code of Practice 021 for waterproofing of buildings.

All work is to be executed in accordance with the instructions issued by the manufacturer of the material being used. Roof coverings and linings are to be laid to the fails, cross falls, etc. provided in the screeds or other surfaces to which they are to be applied.

Surfaces to be waterproofed are to be dry and cleaned of all dust, chips, etc. immediately prior to the commencement of this work and are to be free of any contaminating substances or projections that may damage the waterproofing materials being used.

**POLYETHYLENE SHEETING:** — is to comply with SANS Specification 952 and bear the SANS mark. The sheeting is to be laid with a minimum lap of 150mm, unless otherwise specified, at angles and junctions with laps sealed in accordance with the manufacturer's instructions.

**MASTIC ASPHALT ROOFING:** — is to conform to SANS Specification 297 and is to be laid hot in two or three layers, as stated, with each layer of minimum 4mm thickness and laid to break joint with the underlying layer by not less than 150mm.

Prior to the commencement of any work, the specialists who lay the mastic asphalt roofing are to satisfy themselves as to the acceptability of the surfaces upon which the mastic asphalt is to be laid, as the said specialists will be held fully responsible therefore.

Mastic asphalt to surfaces not exceeding 10-degree slope is to be laid in two layers on and including one layer of approved reinforced waterproof building paper lapped 75mm at all edges. Rates are to include for all cutting and waste on building paper.

Mastic asphalt to surfaces exceeding 100 and not exceeding 200 slope is to be laid in two layers on surfaces which have been hacked, grooved or scoured to provide an adequate key. Rates are to include for the necessary preparation of the surfaces.

Mastic asphalt to vertical surfaces and surfaces exceeding 20-degree slope is to be laid in three layers on and including any necessary expanded metal lathing securely fixed to the surfaces to prevent creeping. Where vertical surfaces do not exceed 300mm in height the surfaces to receive mastic asphalt may alternatively be prime coated with a latex based bitumen emulsion primer prior to the application of the mastic asphalt. Anile fillets to all internal angles are to be run in one operation.

Finishing coats of bituminous-based aluminium paint on mastic asphalt roofing have been measured separately.

**FLEXIBLE GLASS-FIBRE REINFORCED POLYESTER WATERPROOFING**: — shall be of the type specified, or other approved, supplied and laid in-situ by a specialist sub- contractor, all to the approval of the Department and shall carry a written 10 (ten) year guarantee.

The waterproofing applied in-situ shall consist of one layer of three-ply bituminous felt underlay bonded to the substrate and covered with flexible glass-fibre reinforced polyester waterproofing comprising a chopped strand glass-fibre mat having a minimum mass of 450g / $m^2$, impregnated with flexible unsaturated polyester resin and finished with two coats of abrasion-resistant flexible unsaturated polyester surface coating which shall not show any sign of the glass-fibre reinforcement. The total mass of the waterproofing (excluding the bituminous felt underlay) shall be not less than 1.8kg / $m^2$.

Chopped strand glass-fibre mat reinforcement is to comply with the requirements of SANS Specification 419.

All unsaturated polyester resins are to be suitable for their intended use and comply with SANS Specification 713 and are to be ultra-violet ray stabilised.

All flexible glass-fibre reinforced polyester waterproofing is to be finished to approved opaque colours

(excluding red or orange tints), is to be properly cured, and is to be free from porosity, blisters, cracks, surface crazing or other defects which may affect its appearance or its performance, with the surface colours consistent throughout.
Samples of flexible glass-fibre reinforced polyester waterproofing are to be submitted to and approved by the Department and all work executed is to be equal to the approved samples.
**EXPANSION JOINT SEALANTS**: — Polysulphide sealants, where specified, are to be approved polysulphide sealants complying with SANS Specification 110 Type 2, well compacted into joint.
Rates are to include for priming joints where recommended by the manufacturer of the sealant being used with a suitable and approved primer.
All work is to be executed by the manufacturer of the material, or other specialist firm, all in accordance with the manufacturer's instructions.

**RATES**: — for all roofing and linings are to include for cleaning and preparing the surfaces to be waterproofed as before described, for protecting from damage and cleaning down, flood-testing if required and handing over in an acceptable and guaranteed watertight condition at completion.
**Rates for sheet waterproofing materials** are to include for all dressing, bending, narrow widths, angles, intersections, cutting and waste and where applicable for the extra material required for lapping and for sealing laps as described.
**Rates for roofing described as laid on "flat" roofs** are to include for laying to slopes not exceeding 100mm from the horizontal.

**6. ROOF COVERINGS**

**CONCRETE ROOFING TILES**: — shall conform to SANS Specification 542. The tiles are to be of pattern and colour specified and is to be even in thickness, uniform in shape and colour and free from cracks and blemishes. The tiles are to be laid to "straight bond" in accordance with SANS Code of Practice 062 with vertical joints and bottom edges of each course ranging perfectly straight.
Unless otherwise specified each tile in every third course, all tiles in eaves and ridge courses and tiles in every course on each side of hips and valleys shall be secured with copper clout headed nails driven into the battens or with approved non-corrodible tile clips and nails in accordance with the manufacturer's instructions. Where nail holes in tiles have been cut off at hips, valleys, top edges, etc. new holes are to be drilled.
All ridge and hip cappings are to be of the types specified and of colour to match the roofing tiles. The cappings are to be bedded, jointed, pointed and torched up over roofing tiles in 1:3 cement mortar tinted to match the tiles. Where cappings having butt jointed ends are specified, an approved damp proof course conforming to Type C of SANS Specification 952 is to be fixed under, laid over the roofing tiles in accordance with the manufacturer's instructions.
Barge cappings are to be of the types specified and of colour to match the roofing tiles. The barge capping tiles are, unless otherwise specified, to be bedded, jointed, pointed and touched up over roofing tiles in 1:3 cement mortar tinted to match the tiles with every tile drilled and secured with copper clout headed nails to timber barge boards or bearers (elsewhere measured).
Concrete tiles to residential units in non hail area's are permitted.
"**CHROMODEK" ROOFING SHEETS: -** Shall be the secret fixed type, supplied with all fittings in full-length sheets in the profile and colour as specified. Sheets shall be a minimum of .58mm and maximum of .8mm thickness. When .58 thick sheets are used, purlin spacings shall be a maximum of 1.2mtr¢ and maximum

1.5mtr¢ for .8 thickness. Sheets shall leave the factory in the specified colour and any scratches etc., due to handling are to be 'touched up' on site after installation. All fixings, valleys, cappings and securing clips shall be to manufacturers' recommendations and no variations shall be accepted without prior approval from the department.
0,58mm thick roof sheeting for purlins up to 1,2m spacing and 0,8mm thick roof sheeting for purlins exceeding 1,2m – 1,5m spacing.
In area's up to 30Km from the coast, metal roof sheeting to be 0,58mm thick with special corrosion protection as supplied in " Global- Duro" roofing sheets. All other area's to be 0,58mm as "Global-Tech corrosion protection. 0,58mm "Klip Lock 700 " or "Craflock " and 0,8mm " Brownbuilt ". ( 0,8mm is recommended for high rainfall and snow fall area's due to deeper trough. )
**RATES**: **—** for roof coverings, are to include for all necessary half tiles at verges and for all square cutting and waste at verges, abutments, and top and bottom edges and to both sides of ridges.

Rates for cappings, etc. are to include for all short lengths, cutting, waste and fitting at intersections. All measurements are nett. No allowances have been made for overlaps.
**CORRUGATED IRON ROOFING, CLADDING AND FITTINGS: —** are to be of an approved brand and are to be manufactured from galvanized steel sheets of the thickness specified after galvanising and having a galvanized coating of "Iscor Coating Designation Z275" for inland areas and 'Z600" for coastal areas as specified.
Roofing, etc. shall be lapped one and a half corrugations at sides and 30mm at ends unless otherwise specified. Roofing, etc. shall be fixed to timber purlins, rails etc. with standard galvanized drive screws 65mm long and to steel purlins, etc. with 8mm galvanized hook bolts of the lengths stated.
Each screw or bolt shall be fitted with one lead washer and one bituminous felt washer and shall be spaced not less than one screw or bolt to every alternate corrugation across the width at end laps and ends of sheets and at each intermediate purlin or rail.
**Rates for roofing, cladding and fittings are to include for**: —
a) Fixing as described.
b) Bedding washers in an approved mastic sealing compound
c) Coating projecting ends of hook bolts and nuts with bitumen after fixing
d) All square notches, square cutting and waste, laps, fitting and drilling. All measurements are nett. No allowance has been made for laps.
**FLUTED STEEL ROOFING, CLADDING AND FITTINGS**: **—** are to be approved galvanized fluted steel sheets and fittings manufactured from galvanized steel sheets of the thickness specified after galvanising
(a) **Galvanized steel sheets and fittings**: **—** are to be manufactured from galvanized steel having a galvanized coating of "Iscor Coating Designation Z275" for inland areas and of "Z600" for coastal areas as specified with the sheets having a plain galvanized finish and the fittings an embossed galvanized finish.
Roofing, etc. shall be fixed to timber purlins, rails, etc. with standard drive crews of the lengths stated and to steel purlins, rails, etc. with 8mm galvanized hook bolts of the lengths stated. Each fixing screw or bolt shall be fitted with washers as recommended by the manufacturer of the roofing
Vertical cladding shall be fixed with broad flutes externally - unless otherwise described - to timber rails

with standard galvanized drive screws 50mm long and to steel rails with 6mm diameter x 25mm long galvanized sheet bolts. Each fixing screw or bolt shall be fitted with washers as recommended by the manufacturer of the cladding including drilling steel rails as necessary.

(b) **Baked enamel finished galvanized steel sheets and fittings**: **—** are to be manufactured from un-passivated galvanized steel having a galvanized coating of "Iscor Coating Designation Z275" and finished where described in the items, with approved factory applied baked enamel finish of colours to be selected by the Department.

Roofing, etc. shall be fixed to timber purlins, rails, etc. with sherardised or stainless steel drive screws of the lengths stated and to steel purlins, rails, etc. with 8mm diameter sherardised or stainless steel hook bolts of the lengths stated. Each fixing screw or bolt shall be fitted with washers as recommended by the manufacturer of the roofing.

Vertical cladding shall be fixed with broad flutes externally, unless otherwise described, to timber rails with sherardised or stainless steel drive screws 50mm long and to steel rails with 6mm diameter x 25mm long sherardised or stainless steel sheet

bolts. Each fixing screw or bolt shall be fitted with washers as recommended by the manufacturer of the cladding including drilling rails as necessary.

(c) **Generally**: **—** where sheet lengths are in excess of 12m these have been measured separately.

Roofing, etc. shall be lapped one flute at sides and 230mm at ends unless otherwise specified. Fixing roofing sheets are to be spaced one every crest along purlins at top and bottom edges of roof slopes and one to every alternate crest along intermediate purlins. Fixings to vertical cladding are to be spaced one to even alternate trough to each rail.

Fittings, unless otherwise specified, are to be lapped a minimum of 150mm and where necessary are to be drilled for and fixed with the fixings securing the roofing and cladding sheets.

**Rates for roofing, cladding and fittings are to include for**: —

(a) Fixing as described and in accordance with the manufacturer's instructions.

(b) Seam bolting all side laps at not exceeding 450mm centres with 6mm diameter x 25mm long sheet bolts or with 20mm x No. 14 self-tapping screws and each screw or bolt is to be fitted with washers as recommended by the manufacturer of the roofing.

(c) Fixing of fittings where described as fastened to roofing, cladding, etc. with approved pop rivets spaced at not more than 340mm centres.

(d) Sealing side and end laps of sheeting and end laps of fittings with one continuous strip of approved 5mm diameter pre-formed flexible sealant strip.

(e) Coating the exposed heads of fixings and fasteners to baked enamel finished materials and cut edges of sheets and fittings with matching touch-up compound supplied by the manufacturer of the sheeting and in accordance with his instructions.

(f) All square notches, square cutting and waste, laps fitting and drilling. No punched holes will be permitted.

(g) Taking special care at all times to prevent damage to the finished surfaces of the baked enamel finished materials.

All measurements are nett. No allowance has been made for laps.

## 7. CARPENTRY AND JOINERY

**NOMENCLATURE OF TIMBERS**: — Timber described as "softwood" is to be South African softwood of the relevant type, grade, etc. as specified.

The names used for imported timbers are those given in Supplement No. 1 to SANS Code of Practice 12 under "Nomenclature of Standard Trade Names of Imported Commercial Timbers used in South Africa" and the

Contractor is referred thereto.

**TIMBER SIZES**: **—** Sawn and wrot timbers are to be of the full sizes stated.

Where "out of" sizes have been shown for wrot timbers on the drawings, an allowance of 4mm for each wrot face off the sizes shown has been made.

Doors, fanlight, sashes, manufactured boarding, plywood, veneers, etc. must be of the full thickness specified.

Where doors, door frames, fanlights and frames; sashes, windows and frames are measured as numbered items, the overall sizes are given to the nearest 10mm.

Tolerances in nominal dimensions for imported timber shall not exceed the following:

a) For nominal dimensions up to 76mm the actual dimension may be 2.5mm under for each 25mm

b) For nominal dimensions 76mm and over the actual dimension may be 1.6mm under for each 25mm.

**STORAGE OF TIMBERS**: — Timber delivered to the site is to be property stacked above ground, either on bearers or platforms under cover and protected from inclement weather.

**ORDERS**: — for timber, are to be placed immediately after the Contract is signed, as the Contractor will be held responsible for any delay in delivery.

**PRE-TREATMENT OF TIMBERS**: — All permanent timbers installed in the buildings are to be treated against borer, cryptotermes, termites, and all wood destroying agencies with an approved preventative, all in accordance with SANS Code of Practice 05.

Any surface subsequently exposed by cutting or planing must be touched up with the same preservative solution and rates are to include for all preservative required.

The Contractor is to obtain a certificate from the merchants supplying the treated timber, to the effect that the timber has been treated against wood destroying agencies. The Department has the right to remove samples of the treated timber to have tests carried out by the Division of Entomology or any other Authority.

Temporary timber on the site, e.g. shuttering props, etc. must be free from wood destroying agencies. Any timber so affected is to be immediately removed from the site.

Materials which do not comply with the above requirements or are in any way damaged or discoloured by the pre-treatment must be replaced by the Contractor at his own expense, if so directed by the Department.

**STRESS GRADING OF SOFTWOOD TIMBER**: —The Mechanical Stress Grading of Softwood Timber (Flexural Method) shall be in accordance with SANS Code of Practice 0149.

**STRUCTURAL TIMBER**: — for carpentry is to be South African softwood in accordance with SANS Specification 563 and, unless otherwise specified, of Stress Grade V4, and branded accordingly. If it is necessary to use sizes that have to be re-sawn, these shall be re-graded and stamped with the respective SANS stress grade mark. Unless this is done, timber which is re-sawn is no longer considered as complying with the specification and shall on no account be used.

**BRANDERING / BATTENS**: — of cross-sectional size 50 x 50mm and under shall be South African softwood in accordance with SANS Specification 653 and branded accordingly.

**JOINERY AND SHELVING: —** Softwood for joinery and shelving shall be South African softwood (S. A. Pine) in accordance with SANS Specification 1359 and branded accordingly. All timber for joinery is to be air or kiln-dried to a moisture content of approximately 12 %.

joinery is to be air or kiln dried to a moisture content of approximately 12 %.
Shelving to linen stores to be timber slatted with wall bands or free standing units as specified.
**STRUCTURAL LAMINATED TIMBERS: —** are to be of the sizes detailed, wrot on all faces and are to be manufactured by an experienced fabricator to the approval of the Department. Adhesives used must meet the requirements of the current SANS 1204 for external use.
The surface appearance of members shall be Class C (Constructional) or Class S (Selected) as defined in SANS Specification 876 and as stated in the items
**FINGER-JOINTED TIMBERS**: **—** are to be manufactured in accordance with SANS Code of Practice 096— "The manufacture of finger-jointed structural timber".

Contractors wishing to use finger-jointed timber must supply a guarantee that the finger jointing complies with the above Code of Practice and that the glue is suitable for the particular member.
**JOINTING OF PURLINS, FASCIAS, RAILS, BEAMS, ETC.**: —shall, unless otherwise detailed, be as follows: —
Purlins, slating battens, etc. of cross-sectional size 50 x 76mm and under shall be jointed over the rafter.
Larger sized purlins may be dealt with in the same way or by using some other suitable, recognised method.
All purlins and battens shall be fixed to the supporting rafter by at least one nail skew driven from the direction of the ridge. Where the purlin or batten is fixed at more than 900mm centres, at least two nails shall be used at every fixing point.
Fascias shall be jointed over rafters.
Beams, rails, etc. shall be jointed over a support or at 1/5th span with a recognised joint using bolts, etc.
Roof and floor plates are to be halved at joints, angles and intersections and nailed together.
Floor joists and bearers are to have splayed heading joints nailed together and staggered to occur over bearers and sleeper piers respectively.
Sawn brandering is to be butt-jointed at heading joints and angles and where wrot, is to have splayed heading joints and mitred angles over all point of support.
**HARD WOODS:** — (Red Meranti and Sapele) are to be best quality, specially selected and well seasoned, free from all sapwood to the approval of the Department and are to be well kiln-dried.
Red Meranti is to be even in grain and colour, selected from "Standard and Better" grade from Malaysia.
Sapele is to be *Entaindrophragma cylindrium* of F..A.S. grade.
**PREFABRICATED TIMBER ROOF TRUSSES: -**
**Design**: —The design of prefabricated roof trusses, bracing, and secondary members forming part of the total timber roof construction shall be prepared by a professional structural engineer (Truss Systems Engineer) strictly in accordance with SANS Code of Practice 0160 and the superimposed loading, unless otherwise specified, is to be taken as that for inaccessible roofs.
**Analysis**: — From the configuration and mechanism shown on the tender drawings the Truss System Engineer shall submit, through the Contractor, to the Department detailed calculations and working drawings showing timber sizes, connections, truss dimensions, etc.
This submission must include details of both trusses and bracing as specified below:

This submission must include details of both trusses and bracing as specified below:

a) TRUSSES: The analysis of the truss system is to include diagrams of the trusses with marked up members and nodes showing dimensions, positions of supports and positions and values of applied loads, which, if not specified in the tender documents, must be derived from an approved source of reference which shall be indicated in the analysis. Due account must be taken of any eccentricity particularly at supports.
The analysis must also indicate allowable stresses, internal axial forces, moments and resulting stresses, as well as timber sizes and grades and detailed plate sizes
(b) BRACING: Bracing must be designed to withstand the forces specified in SANS Code of

Practice 0163 clauses 6 and 7.
If the bracing system incorporates trusses, the additional forces must be shown in the analysis of the trusses.
The drawings must give all the information necessary for the construction of the bracing.
An outline of the bracing system, including temporary bracing must be shown on a working drawing giving clear details of fixings and anchorages into the supporting structure at wall plate level. Interference of bracing with truss members must be taken into account. Moments caused by forces applied between node points of bracing trusses and the axial forces must be given in the bracing calculations, also sizes and fixings of the bracing system.
**Submissions**: **—** A copy of letter reference TR1 (attached at the end of this document) completed and signed by the Truss System Engineer must be submitted by the Contractor at the same time as the list of Sub-Contractors. Two sets of calculations and drawings with pertinent erection instructions for the whole roof construction as presented by the Truss System Engineer must be submitted to the Department for consideration and permission to proceed.
This in no way absolves the Contractor of his responsibilities.
Any modifications to design or drawings are to be arranged directly between the Truss System Engineer and the Department. It will be the Contractor's responsibility to ensure that information is presented to the Department in good time and no claims will be entertained in respect of any delays resulting from the late approval of drawings, etc.
Any difference in cost between the roof system initially submitted by the Contractor and the finally accepted system to meet the original design requirements will be for the account of the Contractor.
The Truss System Engineer will be required to inspect the roof structure and certify on letter reference TR2 (attached at the end of this document) that the construction is in conformity with his design, and any costs in this respect must be included in rates for the truss system.
If, in the opinion of the Department, further visits are necessary due to errors or omissions on the part of the Contractor or the Truss System Engineer the costs of these inspections will be for the account of the Contractor.
**Fabrication and Storage**: — Fabrication shall not commence until written permission has been given by the Department. The prefabricated roof trusses shall be manufactured, supplied and delivered to site by an

approved manufacturer with all members accurately mitre cut, close butted and rigidly fixed together by approved galvanized metal spike connectors applied simultaneously to both sides of every joint by use of a mechanical press in accordance with SANS Code of Practice 0163.
Permissible deviations in fabrication of trusses are to be as specified in SANS Code of Practice 0155. The following will not be permitted at joints: —
b) knots, splits or finger joints
c) varying member thicknesses
d) plates not fully pressed into timber
e) gaps between members exceeding 1.5mm average over the width of the mitred members.
Stress grade marks must be clearly visible on all members.
Relevant dimensions must be checked on site before fabrication. Trusses must be stored off the ground and under cover both at the factory and on site.

**Erection and Bracing:** — Unless otherwise instructed, erection must be carried out as described in "The Erection and Bracing of Timber Roof Trusses" published by the Truss Plate Association of South Africa and the National Timber Research Institute - CSIR.
Where the overall lengths of trusses exceed 13 m, complete braced bays are to be assembled on level ground and lifted into position suspended at maximum 3m intervals from a spreader bar.
Alternatively, braced bays may be assembled in position on a minimum of two lines of temporary intermediate supports below node joints. Temporary supports must be removed before roof covering is placed.
The erector must be suitably qualified and must satisfy the Department that he can meet the specification.
Where the roof incorporates a hipped end, the construction is to commence with the hip, otherwise erection is to be commenced with a fully braced bay.
Temporary bracing must be installed as erection proceeds in accordance with the accepted design.
The Contractor must notify the Department in sufficient time in order that an inspection may be made before the roof covering is placed.
The trusses will be subject to the following tolerances: —
a) maximum out of straight — length/400
b) maximum out of vertical at any point—height/200.
**Rates**: **—** The Contractor is to allow in his rates for the roof trusses for the design, manufacture, supply, hoisting and fixing of the roof trusses and permanent bracing, any necessary temporary bracing, and for the costs of all inspections by the Truss System Engineer.
Purlins or battens for roof coverings have been measured elsewhere. Rates for roof trusses are also to include for the exposed rafters at eaves overhangs to be wrot all round and trimmed and splay cut as required.
**INSULATION, WATERPROOFING AND DUST PROOFING MATERIAL FOR ROOFS**: —
shall be of an approved aluminium foil faced both sides laminated Kraft Paper and synthetic reinforced material fixed in accordance with the manufacturer's instructions, lapped 150mm at all edge, unless otherwise specified.
**GYPSUM PLASTERBOARD**: **—** is to be in accordance with SANS Specification 266. **GYPSUM COVED CORNICES**: — are to be in accordance with SANS Specification 622. **FIBRE CEMENT SHEETS**: **—** are to be in accordance with SANS Specification 685.
**FIBRE CEMENT CELLULOSE SHEETS**: — are to be in accordance with SANS Specification

803.

**HARDBOARD**: — is to be in accordance with SANS Specification 540. Tempered and un- tempered hardboard is to be conditioned in accordance with the manufacturer's instructions before fixing in position.

**VENEERS**: — All decorative face veneers are to be selected kiln dried of best quality of the respective timbers, free from knots, cracks, patchwork, sapwood and other defects and bonded under heat and hydraulic pressure with water-resistant synthetic resin adhesive.

Commercial veneers are to be selected rotary cut hardwood veneers and otherwise as described above.

**PLYWOOD**: — is to be long grain three or five-ply type manufactured with hardwood veneers with selected face veneers as described, bonded under heat and hydraulic pressure with water-resistant synthetic resin adhesive and sanded to a smooth finish.

**CHIPBOARD**: — All joinery fixtures shall be manufactured from 18mm Moisture resistant V313 Melamine Faced Chipboard (Particle Board) only with 32mm worktop as specified.

**BATTEN BOARDING**: — is to be long grain three-ply boarding manufactured with kiln- dried South African Meranti softwood core formed of laminations not exceeding 45mm wide and faced on both sides with selected veneers as described, bonded under heat and hydraulic pressure with water-resistant synthetic resin adhesive and sanded to a smooth finish.

**DECORATIVE LAMINATE LININGS**: — are to be 1.2mm thick approved general purpose quality high pressure decorative melamine laminate sheeting with satin finish and of selected colours and patterns, and rates are to include for all square cutting and waste and square notching, close cut and mitred external angle intersections where required and for bonding to the timber backings with an approved adhesive in accordance with the manufacturer's instructions.

The linings are to be cut out of single sheets in obviate joints but where joints are unavoidable, the sheets are to be butted to form a tight inconspicuous joint.

**NAILS AND SCREWS**: **—** Mild steel nails are to be in accordance with SANS Specification 820. Mild steel and brass screws are to be round headed, countersunk, etc. as appropriate and are to be in accordance with SANS Specification 1171. Nails and screws shall be of the size, length and type appropriate to their respective uses.

**PLUGS, ETC.**: **—** Where items of woodwork are described as "plugged", these may be nailed to timber plugs or slips built into the structure, and where described as "plugged and screwed" these may be screwed to timber or approved patent fixing plugs.

**SHOT FIXING**: — Where items of woodwork are described as "shot fixed" these are to be fixed with an approved cartridge-assisted tool, and rates are to include for all nails, spikes, blanks, washers, cartridges, accessories, etc.

**CARPENTRY**: — Timbers are to be the best of their respective kinds, free from sap, shakes, large, loose or dead knots, wavy edges and other defects and thoroughly seasoned. Wrot surfaces are to be finished clean, smooth and free from tool marks.

finished clean, smooth and free from tool marks.
Timbers shall be in as long lengths as possible.
Rates for sawn and wrot structural timbers are to include for notching, splay and birds mouth cutting, housing, halving, scarfing, cutting timbers to the required lengths, spiking and clinching and or hoisting and fixing timber in position.
**CEILINGS**: — are to be of the types described, fixed to timber brandering, bearers etc. as described and with panels set out so as to give even width panels not less than half a sheet wide at edges. Brandering shall be spaced at not more than 400mm c/c and fixed at right angles to sheets.
**FLUSH PLASTERED CEILINGS: —** are to be formed of gypsum plaster board of the thickness stated, generally in 1200mm widths and long lengths, fixed grey side down to timber brandering, bearers, etc. as described, with butted joints between the boards covered with 65mm wide strips of galvanized wire scrim fixed along both edges, including all square notches and square cutting and waste, and the ceiling finished with two coats of approved retarded hemi hydrate gypsum plaster applied in accordance with the manufacturer's instructions to a finished thickness of not less than 6mm, including pressing into scrim over joints and finished to a smooth polished surface.

**TRAP DOORS:- 900 x 600 Prefabricated hinged trap door.**
**SUSPENDED CEILINGS BOARDS**: **—** are to be of the types described or as specified – normally 6mm x 600mm x 1200mm embossed fibre cement boards - and inclusive of their component parts must be of sufficient strength to perform the function for which they are to be used, manufactured from best quality materials and conform to the requirements of the Fire Master. The exposed surfaces of all ceiling panels and supporting members are to be uniform in colour and free from surface blemishes.
Hangers are to be galvanized and are to be at maximum 1, 2mtr centres to meet the requirements of the specification, each with one end fixed to the suspension grid main bearers and the other end fitted with suitable galvanized fixing straps to the roof structure. Fixing points must be agreed to by the Department before any power shot fixings are made. Hangers must not be suspended from air-conditioning ducts.
Hangers to be provided at all four corners of recessed light fittings.
Component parts and fixings other than aluminium must be non-corrosive and able to withstand atmospheric pollution. Surfaces of aluminium which are in contact with other materials when fixed, particularly ferrous metals, are to be suitably insulated to prevent electrolytic corrosion.
All work is to be executed by specialists in accordance with the manufacturer's instructions, and to the approval of the Department.
Rates for ceilings are to include for hangers, suspension systems, ceiling panels, for constructing the ceilings in a manner suitable for carrying air conditioning diffusers and light fittings in the positions required, for setting out the ceilings to layouts approved by the Department, for all non-standard size panels, for modifications to standard suspension systems as necessary to work around any air-conditioning ducts or pipes or light fittings, for all necessary square cutting and waste, notching and fitting around projections, columns, etc.
**EXPOSED TEE-SYSTEM SUSPENDED CEILINGS**: — are to be of the type described with main tees and cross tees spaced at the required centres to suit the sizes of panels used, with the cross tees fitted between and notched to form a flush fit with main tees unless otherwise described. All suspended ceilings to be fitted with shadow line trimming to perimeters.
Main and cross tees shall be holed as necessary and provided with timber wedges or steel clips to prevent ceiling panels from lifting.
**CONCEALED TEE-SYSTEM SUSPENDED CEILINGS**: — are to be of the type described with main and

cross tee section bearers spaced at the required centres and all properly fitted together at intersections.
**ALUMINIUM TRIMS TO CEILINGS**: — are to be of extruded aluminium of 6063-TF or equivalent quality and temper, of the sections described. Anodised trims are to be of the colour stated.
Rates are to include for all cutting, fitting at intersections, mitres, etc. and rates for items described as fixed with screws are to include for countersunk drilling and fixing with approved countersunk stainless steel screws.
**INSULATION MATERIAL FOR CEILINGS:** — shall be 75mm thick resin bonded glass wool / mineral wool thermal insulation blanket complying with SANS Specification 1381 of the thickness specified, delivered to the site in unopened rolls in its original factory wrappings over solid gypsum boards or styrene of 25mm thickness as specified glued to
suspended ceiling tiles.

**DOORS: —**
**Flush Doors: -** Semi-solid and solid laminated flush doors are to be of approved manufacture complying with SANS Specification 545.
The doors are to be finished on both sides with the facing veneers specified and concealed on both stiles unless otherwise specified, with hardwood edge strips and where doors are required to receive a transparent finish, the edge strips are to match the facing veneers.
Doors with rebated meeting stiles are to have edge strips to the meeting stiles not less than 19mm thick.
Each door or leaf of double door, described as hung to swing, is to be fitted with necessary hardwood reinforcing blocks for bottom shoe and top centre of spring hinge.
Unless otherwise specified, all flush doors are to be interior quality, but, where exterior doors are specified, the glue used must comply with Type WBP of SANS 2304.
**FRAMED, LEDGED AND BRACED BATTEN DOORS, ETC**.: — Doors described as filled in with V-jointed boarding are to be filled in flush on one side with tongued and grooved vertical boarding, V-jointed on one or both sides and of the thickness stated. The boarding is to be in narrow widths, closely cramped up, rebated on outer edge and housed to grooves in stiles and rails and twice brass countersunk screwed at each intersection.
Ledges and braces and inner edges of the abutting stiles and rails are to be chamfered to form a V-joint at junction with the boarding. Braces to fall from lock to hinge side.
**ENTRANCES TO SECLUSION WARDS: -** Entrances to seclusion ward buildings shall be fitted with remote controlled full height 'Man Trap' Security Cubicles with bell pushes fitted to both entry and exit sides and remote unlocking / release operation enabled from security booth.
**Doors to Seclusion Rooms**: - Doors to seclusion rooms are to be steel lined solid core units with 100mm x 100mm viewing panel, glazed with 40mm bullet proof glass in a steel frame. Steel lining for doors is to be epoxy laminated to doors and around edges. Internal steel lining to be primed and finished with approved epoxy paint. External face of doors to be finished in veneer as per DOH standard details. Doors to be hung to open inward on special 6mm galvanized steel door frames with lugs pre welded to frame to fit every third course of brickwork. The complete unit is to be hot dip galvanized and built into surrounding 230mm solid brick walls. No welding to be done on site.
**NOTE: -** Above Anti–Bandit Security doors are solely supplied by "Chubb" and "Bitcon Industries" as a

**NOTE:** Above Anti-Bandit security doors are solely supplied by "Shabb" and "Bilson Industries" as a complete unit with all fittings and ironmongery.

**DOORS TO X-RAY UNITS**

Entrance doors to X-Ray rooms shall be top hung sliding door size 1830 x 2032 x 40mm, complete with heavy duty sliding door track – 'Henderson' or other approved -, 2.2mm lead insert between panels and four door stoppers. Door is to overlap door opening 100mm each side when closed.

**JOINERY**: — All timbers shall be in as long lengths as possible. Lengths for joinery shall be single where possible and where joints are unavoidable, they shall be made as inconspicuous as possible.

Timber for grounds, firrings, blocks, plugs, etc. shall be sound and free from defects.

All joinery work is to include for work in connecting by mortise and tenon, dovetailing, housing, flush pinning, etc. as may be by required and for all screws, nails and glueing

together and for sinking flush all exposed screws unless otherwise specified.

Wrot surfaces and edges are to be steel scraped and sandpapered before and if necessary, after fixing.

Edges are to be arras rounded unless specified to be angle rounded.

"Arras rounded" denotes that the sharp edges are slightly rounded off and that no mitring is required.

"Angle rounded" denotes rounded from 3mm to 10mm radius and is to include for housed and mitred joints.

Hardwood doors, frames, jamb and soffit linings, etc. are to be treated on all surfaces with one coat of approved sealer before building in, etc. and rates for these items must include for this. Batten doors with tongued and grooved battens are to have the tongues and grooves well sealed before assembling. The sealer used shall be compatible with the finishing coats to be applied.

Horns of door frames are to be checked and splayed back where frames are fixed projecting or flush with surface and built in.

Where doors, fanlights or sashes are described as hung to butts on steel or aluminium frames, rates are to include for supplying necessary steel, brass or stainless steel screws.

Panel work is to be secured to the grounds, etc. with screws concealed behind the mouldings or by sinking the screws and pelleting as directed.

Joinery is to be framed up, but not glued or wedged, immediately the order is given to commence work. Wherever possible, joinery shall not be placed or fabricated in position until the plaster has dried out.

Reasonable tolerance shall be provided at all connections between the joinery and building carcass so that any irregularities, settlements or other movements shall be adequately compensated. All joinery shall be accurately scribed to fit the contour of any irregular surface. Should the joints of any joinery open or give, such defective work is to be taken down, refitted and redecorated or replaced by new joinery at the Contractor's expense.

Only brass screws may be used for hardwood joinery.

The Contractor is to allow for cross-tonguing all solid wood sections unobtainable in single widths.

No joinery is to be primed until it has been inspected and approved by the Department.

All joinery liable to injury must be protected to the satisfaction of the Department. Rates must include for this temporary protection.

Rates for timber frames, mullions, transoms, linings, standards, rails, fascias, cornices, skirtings, beads, picture rails, etc. are to include for mitres, etc.

Rates for all items of timber-are to include for fixing and planting on as may be required with necessary panel pins or nails.

**PARTITIONS**:

These are to be of an approved system of standard construction, with an average sound rating of not less than 30 decibels taken over the whole face area.

Framing is to be natural finish anodised aluminium comprising posts at 1200mm centres unless otherwise described, with transom rails where specified, fitted between the posts, a

rail against ceiling and an aluminium standard skirting on each side at base, all neatly and securely fixed together.

Provision is to be made at the base of the partitions and in the ceiling rails and posts for electrical wiring, which will be installed under the electrical sub-contract, and the ceiling tails and end posts are to be fitted with continuous removable access plates.

Solid panelling is to be approved solid chip core panels of the thickness specified faced on both sides as described in the items.

Glazed panels are to be glazed as required, complete with all necessary natural finish anodised aluminium glazing beads and vinyl glazing strips.

Louver panels where specified are to be approved natural finish anodised aluminium adjustable louver sets each comprising head and sill weather bars and two jamb strips each fitted with louver brackets with spring loaded clips for and fitted with and including louvers as required and complete with tilt bars and operating lever handles. Where the openings are not the correct size to suit a full number of standard width louver blades, an alternate head weather bar must be provided to suit a fixed louver blade of the required width. The louver sets are to be fitted with the jamb strips positioned horizontally so that the louvers will be fixed vertically.

Partitions are to be in 1200mm modules, unless otherwise specified, except at ends where the odd lengths are to be made up by a narrow width at one end of the partition.

Ends of partitions against walls, window frames, etc. and the top edge of partitions against ceilings are to be fitted on both sides of partition with approved vinyl scribing sections fitted between the structure and the end post or top rail of the partition.

Plain openings are to have aluminium frames similar to door openings neatly fitted into the framing.

Doors are to be solid laminated flush doors complying with SANS Specification 545. The doors are to be finished on both sides with veneer as described in the items and concealed on both stiles with matching hardwood edge strips.

Where doors are described as having observation openings, these openings are to be of the sizes stated, glazed as specified with all edges bedded in approved neoprene gaskets and fixed with 10 x 25mm wrot matching hardwood rebated glazing beads mitred round and bradded to both sides.

Rates for doors are to include for all necessary additional aluminium framing to form door openings, and for hanging the doors on and including one and a half pairs of 102mm satin chrome finish brass hinges to each

door.
All locks to doors in demountable partitions are to be supplied with two keys, and are to be controlled by the same master key as the mortise locks used elsewhere in the Contract when specified.
Unless otherwise specified all veneered solid panelling and doors are to be finished as follows: —
Prepare, stop with tinted stopping, apply an approved stain as necessary to achieve uniform colour appearance, and three coats of approved clear matt polyurethane finish including burnishing with steel wool between coats.
Rates for demountable partitions are to include for supplying, assembling, erecting, finishing, glazing and fixing complete between finished surfaces of concrete floors, plastered walls and ceilings, and all in accordance with the manufacturer's instructions.

**DEMOUNTABLE PARTITIONS 50MM ( NATURAL ANODISED).**

**Extruded Aluminium Sections**

Supply and fit demountable "Kappa" partition system comprising anodized aluminium U- Channel fitted to suspended ceilings. Vertical split-post (mullion) to be fitted between floor and ceiling U-Channel at 1225mm c/c with angle brackets. Once framing is fixed, fit panels into place and secure with clip-on cover plates.
All aluminium sections may be anodized or powder coated in a variety of colours.

**Panels**

41mm thick semi solid core panels 2032 x 1200mm. The panels are made up of two outer skins of 3.2mm hardboard cladding. Lower panels to be provided with a 150mm wide solid mid-rail 850mm from the base of the panel to the centre of the mid- rail built in as part of the construction. The panels to be prepared before applying the final finish as specified.

**Construction**

Right angled corners to be formed with natural anodized aluminium radiused corner post fitted from floor to ceiling. Floor fixing to be angle brackets and ceiling fixing to be hidden block. The ceiling U-Channel butts up against radiused corner post.

**Door Frames**

Door frames to be natural anodized aluminium pre-fitted with woolpile gaskets, clipped into H-Profile at head and clipped into combination split post and cover plate at styles. The rebate on the door frame caters for standard doors of a thickness between 40mm and 44mm.

**Glazing**

Glazed panes to be framed with H-Profile fitted horizontally at top and bottom, butted against side of split-post and clip on cover plate combination and fixed with angle brackets. Glazing sections pre-fitted with woolpile gaskets and set into H-profiles and into post / cover plate combinations to form a neat glazing opening. Glazing beads pre-fitted with woolpile gaskets and then clipped into glazing section.

**Termination**

Openings for louver frames, sliding doors and windows, serving hatches and partition ends are to be lined with the aluminium termination section.

**Skirtings**

76mm high aluminium skirting to be glued to panels.

80mm high aluminium skirting to be glued to panels.

**DRYWALL PARTITIONS**:

**Studs**

50mm x 33.5mm x 0.5mm thick drywall galvanised steel studs are used. The studs to receive aluminium extrusions clipped onto both sides of the stud. Framing to be securely fixed to walls, floor and ceilings where necessary. Stud connectors to be used to join horizontal studs to vertical studs.

**Floor Track**

52mm x 25mm x0.6mm galvanised sheet steel track to be used.

**Panels**

12,7mm thick tapered edged gypsum plasterboard panels used and decorated in situ with panels secured to either side of framework.

Patient care areas to be 12mm Supa Wood panels in framework as specified.

**Construction**

Internal walls are constructed by fixing drywall studs to floor track @ 600mm c/c. Wall and ceiling junctions are formed by fixing 84mm x 19mm aluminium ceiling and wall channel to wall or ceiling. The floor track is then fixed into this; alternatively, these components may be fixed simultaneously. The studs are then fixed to floor.

The partitions, unless otherwise described are to be 75mm thick and covered both sides with 12,7mm thick tapered edged gypsum board in 1200mm widths to height specified.

The gypsum boards are screwed @ +/- 300mm c/c at all intersections to the floor and head wall tracks and vertical studs.

Using self-drilling, self-tapping, rust proofed countersunk screws, with screw heads and joints between boards and between abutting edges of boards flushed up with an approved jointing material.

**Exposed Aluminium Framing**

Door frames, glazing termination and ceiling and wall channels to be natural anodised aluminium. 25 x 25 x 1.5 aluminium angle stuck to external corners of partitioning. 80mm high aluminium skirting glued in position.

**Glazing**

Aluminium glazing section is clipped onto the flanged end of the stud around the glazing perimeter. The glazing section has a recess to accept a rectangular clip-in glazing bead which enables 3mm-8mm thick glass to be received in the system. The glass is retained with various sizes of PVC glazing gasket.

**Termination**

Openings for louver frames, sliding doors and windows, serving hatches and partition ends are to be lined with the aluminium termination section.

**Skirting**

The system is designed to accept recessed base, female, 60mm high aluminium skirting.

**Sound Insulation**

75mm Fibreglass Cavity Bat with a 35g glass tissue or 75mm Isotherm “Acoustisorb’ mineral wool blanket is to be installed between studding before fixing final outer panel.

All work is to be executed by a firm specialising in this type of work and all to the approval of the Department.

**8. FLOOR COVERINGS, PLASTIC LININGS, ETC.**

**FLOOR SHEETING**: — are to be of the composition, type, size and thickness specified with colour, pattern, graining, etc, consistent throughout, all to the approval of the Department.
Thermoplastic floor tiles: — are not to be used.
Fully flexible vinyl floor sheeting: — are to comply with SANS Specification 786 and is to be 2.5 mm nominal thickness.
Recessed entrance mats with brass frame at main entrance into a health facility as "Belgotex" Grimbuster or other approved. This to be positioned outside before entering.
In patient care area's, no perforations to floor covering is to be made. Eg door stops, door barrel bolt floor keeps etc.
Where the specified sizes and/or thicknesses of floor sheeting differ from those in the SANS Specifications, such items of floor sheeting shall comply in all other respects with the relevant SANS Specifications.
**SKIRTINGS, STAIR NOSINGS, EDGING STRIPS, ETC**.: —are to be of the types and sizes specified and are to be of approved manufacture
**CARPET TILES AND SHEETING**: — are to be of the types specified and of approved colours and patterns all to approval of the Department.

**LAYING**: —
Vinyl Floor covering laying procedure and polishing.
Site conditions required before the layer commences an installing of a Resilient Floor covering. Some of these conditions may appear obvious, but they are not always complied with. If any of the following recommendations are ignored, it is likely that a number of problems will arise during or after installation of the flooring.
1. All building materials and equipment, e.g. sand, scaffolding, tools, etc. should be removed. (Do not allow heaps of sand, concrete, etc., to remain on the surface of the sub- floor since moisture transfer to the sub-floor takes place).
2. All resilient flooring materials require a smooth, hard, clean and level surface, not only for appearance but also for achieving a satisfactory adhesive bond and long-term durability. The Specifier and the Main Contractor shall ensure that the sub-floor is acceptable to receive the resilient flooring specified in respect of levelness, smoothness, soundness and cleanness. (The SANS Code of Practice 070/1991 as amended 1993 Section 9.3 details the requirements in this regard).
The flooring contractor shall ensure that the sub-floor is sufficiently dry prior to the installation of the flooring material. The floor should be tested by means of a Hygrometer or a Tramex. (Of the instruments available for determining moisture levels in sub-floors, the most practical and accurate is the hygrometer).
**SHEETING**
Ensure that the following steps are followed during the installation:
1. Trim off factory leading edge before laying sheeting.
2. Align the sheet in position that there is an opening no bigger than 1mm between adjacent sheets. For the best results, the width of a credit card is an acceptable measure.
3. Apply adhesive according to the manufacturers' specifications.
4. Roll the floor during and after installation with a 68kg roller to maximize the adhesion between the sheeting and the adhesive.
5. Complete the welding 24 hours after the installation. Groove the joins open with a suitable hand or electric groover to a width of not wider than 3mm and not deeper than 1.5mm. Weld the joins with a hot air welding gun with temperature settings of between 4-6 temperature setting and use a speed nozzle that will not burn the material or damage the coating. Use a sharp spatula and guide plate and remove the excess welding

in two stages.

6. All vinyl sheeting needs to be stripped and sealed 72 hours after installation. Please ensure you use a good quality product.

2.1 **HYGROMETER**

When a hygrometer is positioned on a sub-floor surface, the reading of the relative humidity of the entrapped air space is obtained.

- A hygrometer reading of less than 70% indicates that the sub-floor is sufficiently dry for flooring to be laid upon it.
- If the hygrometer indicates a final reading of more than 70% when the initial reading of the atmosphere was less than 70% then the sub-floor is unacceptably damp and must be allowed to dry out before any flooring is installed.
- If the hygrometer indicates a final reading of more than 70% when the initial reading of the atmospheric humidity was also greater than 70%, as can occur in coastal areas, then the following applied:

1. If the final reading is significantly higher than the initial reading, then the sub-floor must be considered to be unacceptably damp.
2. If the final reading is similar to, or less than the initial reading, then the moisture content of both the atmosphere and the sub-floor are similar.

2.2 **TRAMEX CONCRETE MOISTURE ENCOUNTER (C.M.E.)**

Any reading on the C.M.E. of 60% or less indicates acceptable moisture content for the installation of any vinyl floor covering.

**3. Floor Preparation – New and Existing (old) Screeds**

3.1 Use of screed smoothing compounds should be avoided except for making minor repairs, however should a full skim be required, then the most common method in both instances is the use of a smoothing compound e.g. **Pavelite** in combination with **Pavelite Bonding Liquid**, mixed to the correct ratio and consistency. Only recommended products, mixed strictly in accordance with manufacturers instruction should be used. Do not use smoothing compound on power floated finishes. It is recommended that in new structures the screeding should be as specified by “Tal” using “Screedmaster”, the pumped method.

A badly undulating floor may require grinding by mechanical means to improve the overall levelness. Although smoothing compounds such as **Pavelite** will improve the sub-floor it will not achieve perfection.

3.2 In cases where old vinyl floor coverings have been uplifted, leaving a bitumen adhesive residue, it is recommended that a strict procedure relating to the “Preparation of Sub Floors with Bitumen Residue”, be complied with.

(This method may not constitute good flooring practice, but has proved to be successful on many occasions. No guarantee is however given or implied).

4. **Construction joints (saw cuts) and Expansion Joints**

4.1Construction joints (saw cuts) in the sub-floor should be cleaned out, and the sides of the saw cut be painted with **Pavelite Bonding Liquid** and allowed to dry. The joint should then be filled with a mixture of **Pavelite** and **Pavelite Bonding Liquid**. It is advisable to slightly overfill the joints, which when dry should be rubbed down with a carborundum stone.

4.2 Expansion joints should be filled with a suitable **Sealant** to prevent the ingress of dirt. **It is bad flooring practice to lay flooring over such a joint**. The flooring should stop at the edge of the joint and cover strips placed over the joint itself. Expansion joints and cover strips should be discussed and designed by a structural engineer.

5 Correct setting out is critical, and consideration should be given to the squareness of the area. It is safest to set out from the longest outside wall.

5.1 The recommended notching for a trowel to spread adhesive is a V notch of 1.5 x 1.5 x 1.5mm at 4.00mm

5.1. The recommended notching for a trowel to spread adhesive is a V notch of 1,5 x 1,5 x 1,5mm at 4,00mm centres. Consideration should however be given to the porosity of the sub-floor. Ensure the use of the recommended adhesive with the appropriate flooring. **Do not** spread the adhesive over a larger area than can be covered within the working/open time of the adhesive.
5.2 All installations must be rolled with a 68kg three sectional articulated metal floor roller on completion, within the working time of the adhesive.
5.3 Welding of sheeting is to be done only after 24 hrs after installation.
5.3. a. Trimming
While the welding rod is still warm, trim off most of the top half using a sharp spatula and spatula guide which fits over the welding rod. Carry out the final trimming using the spatula knife only, when the welding rod has cooled.
5.3.b **Glazing**
The trimmed welding rod will tend to soil more rapidly than the sheeting. It is therefore Important to glaze the surface of the trimmed welding rod.
6. After installation the flooring should be adequately protected, preventing damage caused by other trades working on the site.
7. The completed floor should not be washed or polished for a period of 72 hours after the installation in order to allow the adhesive to cure. This period will vary from one adhesive to another.
7.1 The vinyl floor covering must be cleaned with an approved water based floor Stripper, in order to achieve an acceptable standard of cleanliness for sealing. Avoid excessive use of
water at all times

7.2 Foreign matter such as paint stains, tar, etc. which may not respond to the process must be removed by other means.
7.3 Three coats of a Water Based Emulsion floor dressing, shall then be applied on completely dry surface in accordance with the manufacturer's instructions, allowing one hour drying time between the first and second application of each dressing coat.
**RATES**: —for all floor coverings are to include for laying as described, for cleaning down backing surfaces before laying and or all square and raking cutting and waste and fitting, fair cutting at edges where no skirting occurs, protecting from injury, and for cleaning down, etc. as described, at completion.
Rates for all wall linings are to include for laying as described, cleaning down backing surfaces before laying, sizing backing surfaces if necessary to ensure proper adhesion, all square and raking cutting and waste and fitting, fair cutting at exposed edges, bending at angles and for all narrow widths and protecting from injury and cleaning down, etc. as described, at completion. Wall linings in widths not exceeding 300mm to returns, reveals and the like have not been measured separately, but have been included in the area of the general items of wall linings and rates must include or this.
Rates for skirting, stair nosing, edging strips, etc. is to include for fixing as described, cutting to lengths and fitting at intersections, mitres, ends, etc. and for cleaning down at completion.

**9. IRONMONGERY**

Ironmongery is to be to the approval of the Department and rates are to include for fixing screws of corresponding metal and finish and for oiling and easing as required at completion.
Where catalogue references are given, the articles are to be of the brand specified or other approved.
No two-lever mortise locks are to be used.
Mortise locks, cylinder locks, cupboard locks, etc. are to differ so that no key will pass a second lock, unless otherwise specified. Where mortise locks, cylinders, locks, etc. are specified to be "en-suite" they are to be made "en-suite" in the specified number of "suites". The "suites" are to be controlled by differing sub-master keys with a grand master key controlling all "suites", and no sub-master is to pass any lock of another "suite".
All locks are to be fitted with two keys and the locks are to be stamped with consecutive numbers and the keys to each are to be stamped to correspond with the lock.
Items of ironmongery specified as chrome plated or satin chrome finish are, unless otherwise specified, to be chromium plated or satin chrome finish on solid brass.
Items of ironmongery specified aluminium are to be natural anodised.
Where items of ironmongery are specified as fixed to pressed steel door frames, the Contractor is to ensure that the suppliers of the steel frames prepare the frames for all keeps and do all mortising and drilling required and receive all information necessary regarding ironmongery.
Preparation of steel doorframes for ironmongery has been measured elsewhere.
Where tests of ironmongery are described as "plugged and screwed" these are to be screwed to patent fixing plugs of approved manufacture, and this shall include for plugging and screwing to brickwork or concrete.

Key tags are to be 40mm diameter x 3mm thick plaster of approved colour, engraved on face with the required number of letters and numerals finished in an approved colour, and the tag is to be holed for and fitted with a steel split ring and fixed to key.
Engraved plastic door signs and numeral plates are to be of 5mm thick clear plastic with square polished edges all round with an approved coloured background and sans-serif letters and numerals as described in the items, reverse engraved in the plate with splayed sides and flat reading face and finished in an approved contrasting colour. Each sign is to be twice drilled for and fixed to softwood or hardwood, unless otherwise described, with chromium plated round beaded brass screws. Unless otherwise described, the signs are to be 50mm high with 30mm high, engraved letters or numerals and are to allow a minimum margin of 25mm at both ends. All signs are to be equal to sample to be submitted to and approved by the Department.
Pictorial plastic signs are to be of 5mm thick clear plastic of the sizes stated in the items with square polished edges all round and with the silhouette described in the items applied to the back of the plate by means of the silk screen process in an approved colour and the whole back of the plate finished in an approved contrasting colour. Each sign is to be four times drilled and fixed to softwood or hardwood, unless otherwise described, with chromium plated round-headed brass screws. All signs are to be equal to sample to be submitted to and approved by the Department.

## 10. STRUCTURAL STEEL WORK

**GENERALLY**: — The fabrication, assembly and erection of structural steelwork is to be executed in accordance with SANS Specification 1200H — Structural Steelwork (a copy of which the Contractor will be required to keep on site so that it can be referred to at all times during the Contract) with the following amplifications and amendments: —

**INTERPRETATIONS**: — Clauses 2.1 and 2.2 refer. This preamble, together with any other supplementary preambles appearing in these Bills of Quantities shall be deemed the project specification and are the “Portion 2" referred to in Clause 2.2.

**DEFINITIONS**: — Clause 2.3 of SANS Specification 1200H refers. All references to the Engineer shall be deemed to mean the Department.

**SUB-CONTRACTORS**: —The Contractor shall either (a) have adequate satisfactory and approved experience in this type of work or (b) employ an approved specialist structural steelwork Sub-Contractor. The Contractor, in the case of (a), or the specialist Sub- Contractor, in the case of (b), shall employ at all stages of the Works both on and off site a competent Supervisor experienced in the work.

**MATERIALS**: — Unless otherwise shown on the drawings or hereunder, all rolled sections shall be hot rolled mild steel, and all materials shall comply with one of the following: —

a) Weldable Structural Steels to SANS 4360:
b) Hollow sections to SANS 4848 Part 2 and SANS 6323.
c) Cold rolled sections to SANS 2994.
d) Black bolts and nuts to SANS 135.
e) Precision bolts and nuts to SANS 136.
f) High-strength friction-grip bolts and nuts to SANS 1282.
g) Flat and tapered washers to SANS 1149.
h) Electrodes for welding to SANS 455.

**SHOP DETAIL DRAWINGS**: — The Contractor shall prepare shop detail drawings, in conformity with the details shown on the structural steelwork drawings and to show all information necessary for complete fabrication, assembly, ejection and painting. In the preparation of the shop detail drawings the Contractor is to comply with the requirements of
SANS Code of Practice 0162.

The cost of preparing all necessary shop detail drawings and copies thereof is to be allowed for by the Contractor in his rates.

The Contractor shall submit two copies of his shop detail drawings to the Department for approval at least 10 days before fabrication of the member concerned is due to commence. Such approval does not imply that a complete and comprehensive check of the detail drawings has been carried out, and the Contractor shall remain responsible for ensuring that the steelwork is correctly fabricated, assembled, erected and painted.

**SUBSTITUTION OF SIZES, ETC**.: — No substitution of sizes or joints additional to those shown on the drawings shall be made without the prior approval of the Department. Except in cases of proven non-availability of materials specified, any additional costs involved due to substitution shall be for the Contractor’s account.

**FIXINGS:** — The positions and manner of fixing the hangers for suspended ceiling air- conditioning ducts, pipe installations, etc. to the structural steelwork are to be approved by the Department before work on such installations commences.

**FABRICATION, ASSEMBLY AND ERECTION**

Welding: — shall be carried out in accordance with SANS Code of Practice 044 and the relevant recommendations of SANS Code of Practice 0162 and SANS 5135, and in any case of conflict, the SANS Codes of Practice shall be deemed as binding.

All welders employed on the Works shall be currently classified at least as grade 2 welders as defined by SANS Code of Practice 044. Should the Department so request, proof of the classification shall be produced.

Unless otherwise specified all welds are to be continuous fillet welds of 6mm leg length or not less than the thinnest plate or section being welded.

**Handling, Storage and Erection**: — of members is to be undertaken in such a manner to prevent overstress or damage. Should overstress or damage occur, the Department shall be informed and his instructions sought.

Storage shall be arranged such that damage to applied finishes is prevented.

All plant and equipment used in the erection of structural steelwork shall be adequate in every respect. The Contractor shall allow in his rates for all necessary temporary bracing, and for maintaining and finally removing such temporary bracing.

Fixing of Bolts, etc.: — Unless approved by the Department, no pre-drilled fixings for bolts, etc. will be permitted through hollow section members. Any hollow section member that has been drilled or punctured in any way shall be considered condemned and must be replaced to the satisfaction of the Department.

**INSPECTION AND TESTING**

**Facility for Inspection**: — The Contractor shall afford to the Department all reasonable access to inspect the steelwork at any stage of its fabrication, and shall give due notice before delivery of steelwork to the site to allow inspection and tests to be conducted if so required by the Department.

**Cost of Tests**: — The cost of all tests required by the Department shall be borne by the Administration, except that the costs of the following tests shall be borne by the Contractor:-

(a) Testing of welders and equipment

(b) Such tests (including load tests) as may be necessary by failure on the part of the Contractor to meet the requirements of the specification.

Procedure in the Event of Failure: — In the event of a failure of a test, the Contractor shall

either replace the defective item or prove its sufficiency by means of a load test carried out in accordance with Appendix B of Chapter 6 of the South African Standard Building Regulations. If so required by the Department the Contractor shall also demonstrate by means of tests at his own cost that all like members meet the requirements of the Specification.

**PRIMING OF STRUCTURAL STEELWORK**

**General**

(a) Painting conditions.

No painting shall be undertaken when one or more of the following conditions exist: —

(i) The atmospheric or steel temperature is below $10^0$ C,

(ii) The atmospheric or steel temperature is expected to fall below $7^0$ C before the paint is dry,

(iii)The atmospheric or steel temperature is high enough to cause damage to the paint film,

(iv) In fog or mist,

(v) The relative humidity is greater than 90 *%,*

(vi) Surfaces are or will be wet or damp from rain or other causes,

(vii) Surfaces are contaminated by dirt, dust, grease, oil or other matter detrimental to painting,

(viii) Wind will deposit dust onto un-dried surfaces.

(b) Extent of shop painting.

All surfaces shall be primed as described in the shop except: —

(i) Those to be encased in concrete which are to be left as prepared metal; unless otherwise specified

(ii) Contact surfaces of high strength friction-grip bolt connections which are to be left as prepared metal

(iii) Edges or faces yet to be welded which are to be left as prepared metal over sufficient width from the weld to avoid contamination of the weld or damage to the paint by the effect of welding.

(c) Paint identification, storage and preparation.

All paint shall be supplied in unopened original containers showing the manufacturer's name and trademark date of manufacture and the relevant SANS or other specification number.

No paint shall be used past its maximum life span but otherwise oldest paint shall be used first. Containers shall not be opened until required and opened containers shall be used before unopened containers Before use, paint shall be thoroughly stirred and prepared in accordance with manufacturer's instructions

instructions.
(d) Thinning.
No paint shall be thinned except strictly in accordance with manufacturer's instructions.
(e) Dry film thickness.
Where not specifically later stated this shall be in accordance with manufacturer's instructions for spreading rates. A tolerance of approximately 10% of that thickness will be allowed.
(f) Touching-up surfaces.
Surfaces shall be protected against damage, but should this occur, then the paint shall be rubbed down over the damaged and surrounding area to a sound surface and then restored by re-applying the removed coat properly feathered in with the existing.
Upon completion of site connections, these connections shall be stripe painted with the specified primer before any further painting is carried out.

**Class P1 Preparation and Priming Coat:** — Unless otherwise specified, rates for structural steel-work are to include for Class P1 Preparation and Priming Coat as follows:-
(i) Surfaces are to be cleaned in accordance with SANS Code of Practice 064 to remove all rust, scale, grease, oil, etc. endeavouring to bring the surface to a bright metallic condition, and painted, unless otherwise specified, with one coat of red -oxide zinc chromate primer in accordance with SANS Specification 909 prior to despatch from the works.
(ii) Upon delivery to the site and again after erection any bared or damaged surfaces are to be made good with similar primer.
The Contractor is advised that the finishing coats of paint to be executed after the erection of the structural steelwork have been measured elsewhere.
**Class P2 Preparation and Priming Coat**: — Where specified, rates for structural steelwork are to include for Class P2 Preparation and Priming Coat as follows: —
(i) Surfaces shall be thoroughly cleaned by sandblasting to Swedish Standard SIS 055900 standard Sa 2½ to give minimum peak to valley profile of 50 micrometer when measured by SANS Draft Test Method No. 772.
(ii) Surfaces shall be blown thoroughly clean with compressed air and within four hours of sandblasting, one coat of "Plascon SN 162 Ironguard-4-Zinc" or other approved primer of minimum dry film thickness of 75 micrometer shall be applied by pressure pot spray system in accordance with the manufacturer's instructions in the shop.
(iii) Upon delivery to the site and again after erection, any bared or damaged surfaces are to be made good with similar primer.
The Contractor is advised that the finishing coats comprising one intermediate coat and one finishing coat of chlorinated rubber paint to be executed after the erection of the structural steelwork have been measured elsewhere.
**Class P3 Preparation and Priming Coat**: — Where specified, rates for structural steelwork are to include for Class P3 Preparation and Priming Coat as follows: —
(i) Surfaces shall be thoroughly cleaned by sandblasting to Swedish Standard SIS 055900 standard Sa 2½ to give maximum peak to valley profile of 50 micrometer when measured by SANS Draft Test Method No. 772.

(ii) Surfaces shall be blown thoroughly clean with compressed air and within four hours of sandblasting, one priming coat of "Epidermix 352" or other approved epoxy coal tar of minimum dry film thickness of 75 micrometer shall be applied in the shop.
(iii) Upon delivery to the site and again after erection, any bared or damaged surfaces are to be made good with similar primer.
The Contractor is advised that the finishing coat comprising a further coat of epoxy coal tar to be executed after the erection of the structural steelwork has been measured elsewhere.
**MEASUREMENT AND PAYMENT**: — The provisions and Clause 8 will **NOT** apply and the system of measurement which is adopted in these Bills of Quantities is the only system of measurement which will be recognised in this Contract.
**RATES FOR STRUCTURAL STEELWORK**: — Rates for structural steelwork are to include for all necessary cutting to lengths, splay cut ends, shaping, holing, tapping, threading, forging, turning, assembling, welding, and fixing in position.

## 11. METALWORK

**PROPRIETARY MATERIALS**: — Where proprietary materials are specified, the materials used are to be of the type, specified or other approved by the Department.
**RATES**: — for all metalwork, unless otherwise stated, are to include for cutting to length, shaping, turning, threading, forging, fitting, assembling, riveting, welding, welded running joints, filing smooth, also for all screws and holes and hoisting and fixing in position. All screwed work is to have full threads.
**WELDING AND BRAZING**: — Where items are described as welded or brazed, rates must include neat welding or brazing by experienced workmen using a recognised process and for cleaning and filing or grinding off smooth, all to approval. All welding is to be continuous unless otherwise described.
**SCREW FIXINGS**: — Where items are described as tap screwed, grub screwed, set screwed, etc. rates must include for the necessary screws, for drilling all components and for tapping the components where necessary to receive such screws.
**PIPE MEMBERS**: — All galvanized mild steel pipe members are to be "medium" pipes complying with SANS 1387. Diameters of pipes, unless otherwise stated, are normal internal diameters.
**PRIMING OF STEELWORK**: — All items of fabricated mild steel except where described to be galvanized, are to be cleaned in accordance with SANS Code of Practice 064 to remove all scale, rust, grease, oil, etc. endeavouring to bring the surface to a bright metallic condition, and painted, unless otherwise specified, with one coat of red-oxide zinc chromate primer in accordance with SANS Specification 909 prior to despatch from the works.
**GALVANISING OF STEELWORK**: — All steel surfaces described to be galvanized are to be thoroughly sand, grit or steel shot blasted to white metal in accordance with SANS Code of Practice 064 and fluxed ready for galvanising, and the completed unit is to be hot dip galvanized after fabrication in accordance with SANS Specification 763 for general applications on the relative thicknesses of metal.
The zinc coating shall be continuous and of even thickness over all surfaces entirely free of bare spots, dull, rough patches, blisters and other imperfections and shall show no signs of peeling. Where site welding has to be done, the welds are to be properly cleaned down and cold galvanized to the approval of the Department.
If requested by the Department, the manufacturer shall carry out tests to prove that the requisite mass / thickness of zinc coating is applied and that it is of uniform thickness. The tests shall be made by attaching a test piece of mild steel, approximately 250 x 25 x 6mm, by means of wire, to an article being galvanized, and subjecting the test piece to the same cleaning, fluxing and galvanising treatment as

galvanized, and subjecting the test piece to the same cleaning, fluxing and galvanising treatment as the article being galvanized, and at completion, the test piece tested by a method approved by the South African Bureau of Standards, the cost of which will be borne by the Contractor.

**CHROMIUM PLATING OF STEELWORK:** — All items of fabricated mild steel described to be chromium plated are to be properly de-greased, cleaned and polished perfectly smooth before plating and all in accordance with SANS Specification 728. All items are to be first nickel-plated then chromium plated to provide a bright mirror finish and all plating is to be equal to sample to be submitted for the necessary approval by the Department.

**PRESSED STEEL DOOR FRAMES:** — shall be manufactured from mild steel sheet 1.60mm thick for single rebated frames and 1.20mm thick for double rebated frames. Rebates shall be suitable for 42mm thick doors and fanlights.

The sections are to be accurately bent to form the profiles. Corners are to be mitred and welded and reinforced at back with 1.60mm thick steel angle sections. Transoms for fanlights are to be let into the jambs and welded. All welds are to be solid and cleaned off flush, leaving a perfect outside finish.

Each frame is to be fitted with one pair of sturdy angle or channel section tie bars at base, welded below the frame, and where required for additional strength, cross struts of the same section are to be welded between and at right angles to the main tie bars. Each frame is also to be fitted with one 'diagonal brace as temporary support, standard 230mm long corrugated adjustable building-in lugs at jambs, three rubber shock absorbers in rebate of lock jambs of frames for single doors and one rubber shock absorber, for each leaf in the rebate of the head or transom of frames for double doors.

All frames are to be primed on all surfaces with an approved red oxide zinc chromate priming coat in accordance with SANS Specification before leaving the manufacturer's works, unless specified to be hot dip galvanized, and rates are to include for touching up where necessary with similar primer after building in.

Where frames are specified to be galvanized they are to be hot dip galvanized after manufacture in accordance with the relevant provisions of SANS Specification 763 for general applications on the relative thicknesses of metal.

Frames, unless otherwise described, are to be fitted with one and a half pairs of 100mm five-knuckle loose pin steel hinges, unless otherwise specified for each door or each leaf of double door and with one pair of 75mm five-knuckle loose pin steel hinges for each fanlight. The three-knuckle leaf of each hinge is to be welded into the frame or transom.

Where frames are described to be fitted with brass butts, the frames are to be checked out and fitted, unless otherwise specified, with one and a half pairs of 100mm double bronze washered brass butts for each door or leaf of double door, unless otherwise described, as one pair of 75mm brass butts for each fanlight, with open leaf of each butt secured to the frame or transom by means of 6mm diameter countersunk headed brass set screws screwed to and including a 3mm thick steel backing plate of suitable size welded to frame or transom and drilled and tapped to receive the set screws.

Where frames are described to be fitted with aluminium hinges the frames are to be checked out for and fitted, unless otherwise specified, with one and a half pairs of 100mm five-knuckle aluminium hinges of 6082 alloy with nylon bushes for each door or leaf of double door, unless otherwise described, and one pair of similar hinges to each fanlight, with the three-knuckle leaf of each hinge secured to the frame or transom by means of 6mm diameter countersunk headed stainless steel set screws screwed to and including

a 3mm thick steel backing plate of suitable size welded to frame or transom and drilled and tapped to receive the set screws.
Where frames are to be prepared for the top centres of floor spring hinges, a 6mm thick steel backing plate of suitable size is to be welded into the back of the frame and drilled and tapped to receive the fixing screws of the top centre.
The preparation of frames or all items of ironmongery, other than butts, has been measured separately and the rates against these items are to include for all drilling, mortising, tapping for screws, etc. required for the fixing of keeps, brackets, etc. of the items of ironmongery described. Preparation of frames for locks and latches is to include, in addition to the above, for recessing and fitting the frames with and including standard keeps and adjustable striking plates to suit the types of locks and latches used and with totally enclosed mortar guards 1, 15 metre high above finished floor.
Door and fanlight sizes are given to the nearest 10mm. The building in of frames has been measured separately.
**STAINLESS STEEL DOOR FRAMES**:- shall be manufactured from grade 304 stainless steel sheet 1.60mm thick for single and double rebated frames to profiles as per detailed drawings. Rebates shall be suitable for 42mm thick doors and fanlights. Stainless steel

frames to be used only in Patient Treatment facilities.
**PRESSED STEEL CUPBOARD DOOR FRAMES**: — shall be manufactured from 1.20mm thick mild steel sheet standard sections, having rebates for 42mm thick doors, and fitted with transoms and/or mullions where required and with sill section allowing the cupboard doors to be taken down to general floor level with the floor level inside cupboards not less than 12mm above general floor level. The frames are to be 102mm wide overall.
The sections are to be accurately bent to form the profiles. Corners are to be mitred and welded and reinforced at back with 1.60mm thick steel angle sections. Transoms, mullions and sills are to be neatly fitted at intersections and welded. All welds are to be solid and cleaned off flush, leaving a perfect outside finish.
All frames are to be fitted with rubber shock absorbers to the lock jambs of single doors, and to the head, transom and sill of double doors. Each door is to be fitted with standard corrugated adjustable building in lugs at jambs.
All frames are to be primed on all surfaces with an approved red-oxide zinc chromate priming coat in accordance with SANS Specification 909 before leaving the manufacturer's works, unless specified to be hot dip galvanized, and rates are to include for touching up where necessary with similar primer after building in.
Where frames are specified to be galvanized they are to be hot dip galvanized after manufacture in accordance with the relevant provisions of SANS Specification 763 for general applications on the relative thicknesses of metal.
Frames are to be fitted with one pair of 100mm five-knuckle loose pin steel hinges for each lower door or each leaf of lower double door and with one pair of 75mm five-knuckle loose pin steel hinges for each upper door or each leaf of upper double door. The three-knuckle leaf of each hinge is to be welded into the frame or mullion.
Frames for single cupboard doors shall be prepared for locks or catches as specified and the frames for double doors are to be prepared for two barrel bolts for the first closing leaf of lower doors and one barrel bolt for the first closing leaf of upper doors.
Overall sizes are given to the nearest 10mm. Building in of the frames has been measured separately.
**STEEL WINDOWS AND DOORS**: — shall be in accordance with SANS Specification 727 and the frames are to be provided with fixing lugs or are to be holed for screwing as required.
Industrial type windows are to be suitable for glazing from the inside and all other windows from the outside, unless otherwise described.

Side hung and vertically pivot hung sashes shall open to at least 90 degree horizontally pivot hung sashes to at least 80 degree and bottom hung sashes to 30 degree. Unless otherwise stated, hinges for side hung opening out sashes are to be of the projecting type for easy cleaning.
All opening sashes are to have polished brass furniture.
The transoms and mullions of all purpose-made windows and doors are to be equally spaced between the outer frames of the windows and doors to form openings of equal size. Where this is not the case either the width or the height of the opening is stated, unless otherwise stated, the fixed lights and sashes of all purpose-made windows are to be in one square and the sashes and doors are to open out.
Windows and doors, unless otherwise specified, shall be of “one piece” construction.
Composite windows and doors are to be supplied complete with all necessary standard coupling transoms or mullions.

Stock and purpose made residential type steel windows and school type windows of residential section shall be constructed of standard 25mm steel sections and of metal not less than 3mm thick.
Stock and purpose made industrial type steel windows shall be constructed with main frames of standard 35mm steel sections and of steel not less than 3mm thick, with sashes of standard 25mm steel sections and of steel not less than 3mm thick.
“Universal” sections, where specified, shall be not less than 33mm wide (measured over one opening section only) and of metal not less than 4mm. thick, and with all sight lines maintained (whether consisting of all fixed lights, all opening sashes, or portions of both) and with all glass in the same plane.
Stock and purpose made steel doors, sidelights and fanlights, shall be constructed with the doors of “Universal” sections as before described and the sidelights and fanlights of standard residential sections as before described. Bottom openings in doors and sidelights shall be fitted with kicking plates of one thickness of 1.60mm mild steel sheet fixed with metal beads. Frames of outward opening doors shall be fitted with bottom sills of door framing section (stepped sills) and of inward opening doors with metal ties welded to frames for embedding in threshold (flush sills)
**Top Hung Sashes**: — are to open out on a pair of steel hinges having brass pins and washers and fitted with brass peg stay, steel peg and locking bracket.
Outward Opening Side Hung Sashes: — are to open out on a pair of steel projection hinges having brass pins and washers and fitted with brass two-point handle and brass striking plate and brass sliding stay with friction fastener.
**Inward Opening Side Hung Sashes**: — are to open in on a pair of steel hinges having brass pins and washers and fitted with brass single point handle and steel engaging hook and brass sliding stay with friction fastener.
**Bottom Hung Sashes**: — are to open in on a pair of steel hinges having brass pins and washers and fitted with steel concealed side arms with brass guides and brass spring catch for long arm or hand operation and steel catch plate.
**Horizontally Pivot Hung Sashes**: — are to have brass adjustable friction ring centres and fitted with brass spring catch for long arm or hand operation and steel catch plate.
**Projected Out Sashes**: — are to be balanced on steel concealed side arms, the top of the sash fitted with spring loaded brass shoes to slide in brass guides and fitted at bottom with brass handle and brass striking

spring loaded brass shoes to slide in brass guides and fitted at bottom with brass handle and brass sliding plate.

**Doors**: — are to be hung on one and a half pairs per leaf of steel projection hinges with brass pins and washers and fitted with mortise lock set as specified, and each lock is to be provided with two keys.
Brass concealed bolts are to be fitted at top and bottom of meeting edge of first closing leaf of double doors.
Sidelights and fanlights are to be hung as described for windows.

**Adjustable Louver Sets**: — are to be natural anodised aluminium louver sets of approved manufacture consisting of head and sill weather strips complete with neoprene gaskets and two jamb strips each fitted with louver brackets with spring loaded clips for the specified width of glass louver blades complete with tilt bars and operating lever handles. Where openings are not of a height to suit standard width louver blades an alternate head section with static clips must be provided to take a fixed louver blade of the required width. The louver sets are to be screwed to the steel window frame with stainless steel self-tapping screws and all portions of the louver set which come in contact with the window frame are to be insulated with approved pressure sensitive PVC tape to prevent electrolytic corrosion.

**Burglar Bars**: — are to be standard type burglar bars formed of 20 x 5mm mild steel bars riveted at intersections and riveted at ends to the window frames. The burglar bars to the small-pane type windows are to line through with the glazing bars and windows of the horizontal-pane type or of the no-glazing bar type are to be fitted with burglar bars which are divided as for the small-pane type window.

**Fly screens**: — are to be standard type fly screens suitable for residential opening-out type steel windows, unless otherwise described, and are to be constructed of stove enamelled pressed steel frames fitted with 0.25mm thick mosquito-proof mesh glass-fibre gauze. The fly screens are to be clipped onto the inner face of the steel window after all painting is completed.

All steel windows and doors are to be primed on all surfaces with an approved red oxide zinc chromate priming coat in accordance with SANS Specification 909 before leaving the manufacturer's works, unless specified to be hot dip galvanized, and rates are to include for touching up where necessary with similar primer after building in.

Where steel windows and doors are specified to be galvanized they are to be hot dip galvanized in accordance with the relevant provisions of SANS Specification 763 for general applications on the relative thicknesses of metal.

Loose metal glazing beads, where specified, are to be of an approved type and size, and are to be fixed with screws set in the correct positions for the type of glazing to be used, and neatly mitred at angles.

Immediately the windows and doors have been delivered on site, they are to be thoroughly overhauled and all necessary adjustments or repairs are to be made before they are fixed in position. A further inspection is to be made after building in and any further servicing required must be carried out in order to leave windows and doors in a satisfactory condition after glazing is completed.

All glass and glazing has been measured elsewhere.

Sizes of windows and doors are given to the nearest 10mm. The building in of windows and doors has been measured separately.

**STAINLESS STEEL**: — is to be of the thickness and grade specified and unless otherwise stated is to be buffed to an even satin finish to the approval of the Department.

All welding to stainless steel shall be by argon arc process and where filler rods are used these are to have properties not less than those of the parent metal. All welds are to be ground off smooth and uniform and the whole buffed to an even finish all over. Stainless steel is to be cut and bent in such a manner that a minimum

of welding is required.
Where bending is required, all external angles are to be arras rounded and all internal angles are to be radiused.
All stainless steel work is to be of the highest quality and executed by specialists in this type of work and to the approval of the Department.
**Note that where stainless steel fittings are specified and support work or fixings with bolts, nuts, rivets, etc, are required / specified, these fixings and support work are to be of stainless steel of the same rating / grade as the equipment specified.**
**ALUMINIUM AND ANODISED ALUMINIUM**: — is to be of the brand specified or other approved and of 6063-TF or equivalent quality and temper.
Aluminium bars and sections shall comply with the relevant clauses of SANS 1476, extruded tube and hollow sections with the relevant clauses of SANS 1474, and sheet and

strips with the relevant clauses of SANS 1470. All alloys to be anodised are to be of anodising quality.
Aluminium is to be free from flaws, hammer and die markings or other imperfections.
Anodising of aluminium is to be carried out in accordance with SANS Specification 999 by an approved process. The average anodic film thickness shall be 25 micrometer, and at no point should the anodic film thickness fall below 22 micrometer or be thicker than 30 micrometer.
Prior to anodising, all surfaces are to be de-greased and cleaned, all irregularities removed and flushed off smooth and buffed where necessary.
All anodised aluminium must be coated with a suitable “non-yellowing” methylcrylate lacquer film, approved by the Department, over the entire surface. The lacquer film must be continuous and of a uniform average thickness not less than 10 micrometer. The lacquer thickness must be determined by use of a film meter or other instrument methods as described in ASTM B244-49T. Rates for anodised aluminium must include for this protective coating.
Before the work is put in hand, samples of finish are to be submitted to the Department for approval, and all finished work is to be equal in all respects to the approved samples.
The Contractor shall provide all samples required for testing in accordance with SANS Specification 999. If required, tests on the anodic film are to be carried out at the works of the anodised to verify that the work conforms to SANS Specification 999, the cost of which will be borne by the Contractor.
The surfaces of all aluminium which are jointed to or are in contact with other materials when fixed, particularly ferrous metals, are to be suitably insulated to prevent electrolytic corrosion.
Joints in all aluminium members are to be neatly formed in an approved manner with screw heads, pins, rivets, etc. concealed so that the joints are practically invisible. Screw or bolt jointing is to be kept to a minimum and will be permitted only when welding is impracticable. Unless otherwise described, stainless steel screws or bolts are to be used for jointing and fixing aluminium work. Welded joints are to be formed by argon arc process using SANS 1476/NS6 welding rods and finished off smooth.
Welding is to be executed in such a manner as not to affect the colour of the material or the anodic coating.
Exposed heads of screws, pins, rivets, etc. in coloured anodised aluminium are to be touched up with enamel paint to match the coloured anodised finish.
No deviation may be made from the general requirements or dimensions, but improvements in the general

construction and design affecting neatness, strength or durability may be introduced. If any deviation is proposed, the Contractor must submit detailed drawings showing the particular construction and form or section he proposes to use and such drawings, details and samples of fittings, etc. are to be approved by the Department before manufacture is commenced and every facility must be given for the work to be inspected during manufacture.

No work may be fixed in position until it has been inspected and approved. Anodised aluminium work must be erected as near to the end of the Contract period as possible, to minimise the danger of damage or deterioration.

All work is to be suitably protected during building operations and left in a clean and satisfactorily finished condition on completion. In particular, all anodised aluminium work must be protected against damage, and against deterioration or discolouration caused by

mortar droppings, wax, paint, etc. all to the entire satisfaction of the Department. All work so damaged, deteriorated or discoloured must be replaced at the Contractor's expense.

Rates for aluminium work are to include for necessary cutting to lengths, shaping, turning, threading, forging, fitting, assembling, riveting, welding, welded running joints, filing smooth, also for all screws and holes and hoisting and fixing in position. All screwed work is to have full threads.

**ANODISED ALUMINIUM WELDED WINDOWS AND DOORS**: — are to be of an approved manufacture and design.

Windows and doors are to be fabricated from Medium Universal equal leg sections, unless otherwise specified, measuring 33mm over one opening section and not less than 4mm thick through the flanges and not less than 4.75mm through the web, unless otherwise stated.

The aluminium sections are to be of approved manufacture and of 6063-TF or equivalent quality and temper and are to be anodised after manufacture to the approval of the Department. Welds are to be electrically flash butt resistance welded, properly ground and cleaned off to give a uniform appearances. Anodising, etc. is to be carried out as before described.

All windows and doors are to be suitable for internal glazing and are to be fitted with approved anodised aluminium glazing beads of the "clip on" type. Drilling for the fixing of glazing beads is to be done to suit the thickness of the glass used.

The frames are to be perfectly flat, square, butt-welded at joints (mechanical joints will not be permitted) and all opening sashes must fit perfectly on all faces and open or close freely without binding at any point. The glazing bars must be continuous with continuous intersections (mitred intersections will not be permitted) with ends scribed and fitted to the frames with shouldered ends passed through and riveted over. The sight lines of the main frame, whether consisting of all fixed lights, all opening sashes or portions of both and the glass plane must be the same throughout each window.

Weathering on sections is to be solid extruded with the sections (screwed or riveted on strips will not be permitted) except weather bars to sills of inward opening sashes which must be welded on and not screwed or riveted except in the approved designs of built-up transoms.

No steel is to be used in the manufacture of the windows unless it is stainless steel of quality to A.I.S.I. Type 316. All fittings, butt hinges, screws, nuts, bolts, etc. are to be of high quality aluminium or other approved non-corrosive material compatible with aluminium and of sufficient strength to perform the functions

for which they are used. The handles, sliding stays and peg stays are to have nylon washers, bushes and pressure pads and are to be secured to the frames with screws having riveted ends. Pop rivet fixings will not be permitted.

The transoms and mullions of all purpose-made windows and doors are to be equally spaced between the outer frames to form openings of equal size. Where this is not the case, either the width or the height of the opening is stated. Unless otherwise stated, the fixed lights and sashes of all purpose-made windows and doors are to be in one square and the sashes and doors are to open out.

Frames must be provided with suitable fixing lugs bolted on to frame with aluminium alloy bolts or are to be holed for screwing as required with lugs or holes spaced one near top, one near bottom and not more than 750mm apart intermediately each side of frame. Frames more than 900mm wide are to be provided with similar fixings to top and bottom and not more than 750mm apart.

All composite windows, doors, etc. are to be supplied with suitable and approved coupling mullions or transoms. Rectangular hollow section transoms where specified are to be

25mm x 115mm in section manufactured from 3mm thick aluminium.

The Contractor must submit drawings showing details of sections he proposes to use and these drawings are to be approved by the Department before manufacture is commenced, and when requested, specimen windows and doors complete with all fittings as well as specimen coupling mullions, transoms etc. must be submitted for approval and all windows, doors, etc. supplied must conform to the approved samples.

The manufacturer of the windows and doors must supply a dimensioned set of drawings with the windows and doors, for use on the site, including clearance and strict fixing methods and details.

Windows and doors are to be delivered to the site in suitable protective wrappings or crates and are to be stacked on end and carefully handled at all times to prevent any marking or staining of surfaces.

Immediately the windows and doors have been delivered on the site, they are to be thoroughly overhauled and all necessary adjustments or repairs are to be made before they are fixed in position. A further inspection is to be made after fixing and any further servicing required must be carried out in order to leave the windows and doors in a satisfactory condition and waterproof after glazing is completed.

**Side Hung Sashes**: — are to open out on a pair of aluminium hinges complete with anti- friction weatherproof bushings fixed pin and nylon washers and fitted with anodised aluminium alloy sliding stay with friction fastener and an approved anodised aluminium two point handle and striking plate.

**Bottom Hung Sashes**: — are to open in on a pair of aluminium hinges complete with anti- friction weatherproof bushings, fixed pin and nylon washers and fitted with concealed side arms and strong lever action spring catch and keep.

**Top Hung Sashes**: — are to open out on a pair of aluminium hinges complete with anti- friction weather proof bushings, fixed pin and nylon washers and fitted with anodised aluminium peg stay with cranked locking stay.

**Horizontally Pivot Hung Sashes**: — are to be hung on a pair of approved weatherproof brass satin-chrome finished friction pivots of the greatest possible diameter permissible and fitted at top with strong lever action spring catch for long arm or hand operation and striking plate, unless otherwise stated.

**Vertically Pivot Hung Sashes**: — are to be hung on free pivot cups at the head incorporating nylon bearing sleeves and lever pivots at the sill and fitted with one two-point casement handle and striking plate.

**Projected Out Sashes**: — are to be balanced on approved concealed side arms with stainless steel shoes and channels and fitted at bottom with one approved bow handle with catch incorporated.

shoes and channels and fitted at bottom with one approved bow handle with catch incorporated.

**Projected In Sashes**: — are to be balanced on approved concealed side arms with stainless steel shoes and channels and fitted at top with strong lever action spring catch for long arm or band operation and striking plate:

**Doors**: — are to be side hung to open out on one and a half pairs of aluminium hinges to each leaf complete with anti-friction weatherproof bushings, fixed pin and nylon washers and fitted with lock set as specified, and each lock is to be provided with two keys. Satin chrome finish flush bolts are to be fitted at top and bottom of meeting edge of first closing leaf of double doors.

**Adjustable Louver Sets**: — are to be approved anodised aluminium adjustable louver sets consisting of head and all weather strips fitted with neoprene gaskets and two jamb strips

each fitted with louver brackets with spring loaded clips for the specified width of glass louver blades and complete with tilt bars and operating lever handles. Where the openings are not of height to suit standard width louver blades an alternate head section with static clips must be provided to take a fixed louver blade of the required width. The sets-sets are to be tap screwed to the window frame with stainless steel self-tapping screws.

**GLAZING TO DOORS / ALUMINIUM GLAZED SCREENS**

No glazing permitted to any fitting below Lock Rail ( ie 1,2m high. ).

**Burglar Bars**: — are to be standard type burglar bars formed of 20mm x 5mm aluminium bars riveted at intersections and riveted at ends to the window frame with high strength aluminium rivets. The burglar bars to the small pane type window are to line through with the glazing bars, and windows of the horizontal-pane type or of the no-glazing bar type are to be fitted with burglar bars which are divided as for the small pane type window.

All exposed surfaces of anodised aluminium are to be protected by means of an approved fabric backed adhesive tape. The Contractor shall satisfy the Department that the tape he proposes to use can be easily stripped after long exposure to sunlight, and rates are to include or the final stripping of the protective tape and cleaning dawn to approval at completion.

All work is to be protected during building against deterioration or discolouration caused by mortar droppings, wax, paint, etc. and all work so damaged is to be replaced at the Contractor's expense to the approval of the Department.

All glass and glazing has been elsewhere measured. All sashes and openings, unless otherwise stated, are to be single panes without glazing bars.

All windows and doors must be fixed into preformed openings in the structure (the building- in of windows and doors will not be pen fitted) and rates are to include for supplying necessary templates for forming the openings. Fixing in position of windows and doors has been measured separately. Sizes of windows and doors are given to the nearest 10mm.

**STRONG ROOM DOORS**: — must comply in all respects with SANS Specification 1015 Category 1. Each door is to be provided with two keys and the keys must be forwarded by the supplier under registered cover direct to the Department, and the supplier must clearly indicate the institutions in which the door (or doors) is being installed.

**BURGLAR RESISTING SAFES**: — must comply in all respects with SANS Specification 751. The safes shall be "Office Safe Category 1" as laid down in SANS Specification 751. Each safe is to be provided internally with one shelf and two lockable drawers.
Where the mass of each safe is 680kg or less, provision must be made for securing it rigidly to prevent unauthorised removal; the means of securing shall be at least equal in effectiveness to that which would be provided by four 12mm bolts. Locks shall be lever locks with a minimum of six levers. Each safe is to be provided with two keys to each lock and the keys for any safe must be forwarded by the supplier under registered cover direct to the Department, and the supplier must clearly indicate the institution in which the safe (or safes) is being installed.
**ADJUSTABLE LOUVER GEAR SETS**: — are to be approved natural anodised aluminium adjustable sets consisting of head and sill weather strips fitted with neoprene gaskets and two jamb strips and fitted with sets brackets with spring loaded clips for the specified glass sets blades and complete with tilt bars and operating handles. Where the openings are **not** of a height to suit standard width sets blades an alternate head section with static clips must be provided to take a fixed sets blade of the required width.
**RATES**: — are to include for fixing in accordance with the manufacturers instructions for screwing head and sill weather strips and jamb strips with stainless steel screws to frames
(Elsewhere measured) and for oiling and easing at completion.

## 12. PLASTERING

**MIXING**

The mixing of the materials is to be done on a hard surface.
Once all materials have been mixed, they are not to be remixed with new materials added after 5 (five) hours.

**MATERIALS**

**Stone Chippings**: — are to be approved clean stone chippings of the sizes stated complying with SANS Specification 1083.
**River Sand:** — for floor finishes and screeds is to be clean, sharp, coarse sand free from all impurities, washed if so directed and complying with SANS Specification 1090.
**Plaster Sand:** — is to be clean, sharp, free from all impurities, washed if so directed and is to comply with SANS Specification 1090.
**Cement:** — unless otherwise specified is to be Portland cement of normal setting quality, is to comply with SANS Specification 471, and must be used fresh. Cement containing more than 15% blast furnace slag will not be permitted to be used.
**Lime**: — is to comply with SANS Specification 523.
**Water**: — is to be clean, fresh and free from injurious amounts of acids, alkalis and other organic substances.
**MEASUREMENT OF CONSTITUENT PARTS OF FLOOR FINISHES, TOPPINGS, SCREEDS AND PLASTER FINISHES**: — Cement, sand and stone chippings are to be measured exactly by means of gauge boxes or purpose made wheelbarrows. Part filling or heaping of normal wheelbarrows will not be permitted.
Water is to be accurately measured for each batch, to approval.
Waterproofing compounds, where specified, are to be added to the mixture in the proportions recommended by and in strict accordance with the manufacturer's instructions.
**PREPARATION OF SURFACES**: — Prior to the application of floor finishes, toppings, screeds, plaster finishes etc. the surfaces of the new or existing concrete, brickwork, etc. are to be thoroughly cleaned, chipped, hacked, sloshed, etc. as necessary to ensure a satisfactory bond. The Contractor will be held entirely responsible for the proper and adequate preparation of the surfaces and any work which results in failure in this regard must be made good at the Contractor's expense to the satisfaction of the Department.
**FLOOR SCREEDS, ETC**: — Cement screeds are to consist of one part cement and three parts sand

**FLOOR SCREEDS, ETC**. — Cement screeds are to consist of one part cement and three parts sand, unless otherwise described, and are to be steel towelled, unless otherwise stated, to true smooth and even surfaces, free from tool marks to the satisfaction of the Department to receive the finishes stated in the items. It is recommended that in new structures the screeding should be as specified by "Tal" using "Screedmaster", the pumped method.

**GRANOLITHIC FINISH TO CONCRETE FLOORS, ETC**: — Float up to within 6mm of finished surface with layers on concrete approximately 10mm thick, composed of one part cement, two and a half parts concrete and three and a half parts granite or other approved hard stone chippings. Form finished surface with one part cement and one part fine granite chippings or other approved hard stone graded up to particle, which will pass a 6mm mesh brought to a smooth surface with a steel trowel. The floating and finishing coats are to be performed in one operation.

The granolithic work is to be carried out by experienced workmen and is to be laid in panels

V-jointed and not and not exceeding 6m$^2$ in area or as shown on drawings or described in the Bills of Quantities.

Thin strips if wood or other suitable materials are to be laid between panels to break contact.

Where granolith is described to be tinted, the requisite quantity of oxide of iron or other colouring materials is to be mixed with the finishing thickness.

All granolithic floors, etc. are to be covered up and protected from injury and discolouration during the progress of the work.

Rates for granolithic work are to include for cleaning down and for a coat of approved wax polish or stoep reviver well rubbed in at completion.

## 13. PLASTER

**GENERAL**

Except where otherwise described, all external plaster is to be finished with a wood float and internal plaster is to be finished with a steel trowel, unless otherwise described, all to true and even surfaces, free from tool marks and other defects to the satisfaction of the Department. No distinction has been made for brick or concrete surfaces.

**CEMENT PLASTER**

External cement plaster to wall is to consist on one part cement and four parts sand. External cement plaster to ceilings is to consist of one part cement and three parts sand. Internal cement plaster to walls is to consist of one part cement and five parts sand.

Internal cement plaster to ceilings is to consist if one part cement and three parts sand.

One coat cement plaster to walls shall not be less than 13mm or more than 16mm in thickness, and one coat cement plaster to ceilings shall not be less than 10mm or more than 13mm in thickness, unless otherwise described.

Where plaster is described as undecorated, the same type of approved sand the same brand of cement is to be used throughout to maintain a uniform colour and texture.

**BARIUM PLASTER**

Barium plaster shall consist of two coats plaster, the first coat 13mm thick consisting of one part cement and five parts sand, and the second coat 6mm thick consisting of one part cement and five parts Barium Sulphate. (This is to be applied only to X-Ray Room walls where holed bricks have been used).

All surfaces are to be plastered in one operation from ceiling to floor and corner-to-corner; breaks are to be made only in corners or at junctions of walls and ceilings.

**CURING, PROTECTION, ETC.**: — All floor finishes, paving, plaster finishes and screeds are to be properly cured to approval and all cracks, blisters and other defects which may occur are to be made good and the whole left in a satisfactory-condition at completion.

The finished surfaces are to be properly protected from damage and cleaned down at completion.

**RATES**: — Rates for floor finishes and screeds are to include for preparation of new or existing surfaces, dressing to falls where required, V-joints where specified, curing, protecting from damage and cleaning down at completion.

**Rates for skirtings, risers, etc**. are to include for internal angles at junction with floor, treads, etc. to be square or coved to not more than 50mm girth and in addition are to include for mitres, stops, etc. except where given separately in terms of the Standard System of Measuring Builders' Work.
**Rates for plaster finishes** are to include for preparation of new or existing surfaces, curing, protecting from damage and cleaning down at completion.
**Rates for plastering** are to include for internal angles to be square or coved to not exceeding 50mm girth.
**Rates for rounded angles, fair edges and arrases and the like** are to include for mitres, stops, etc. except where given separately in terms of the Standard System of Measuring Builders' Work.
**Rates for mouldings, projecting bands, coves, weatherings and the like** are to include for dubbing out.
Rates are to include for cutting back against frames and for V-joints cut where concrete abuts brickwork.
**Rates generally** are to include for all sundry making good and working around pipes, balusters, etc.
**GENERALLY**
**Narrow Widths**
Items described as "Extra over for narrow widths" include for all reveals, edges, soffits, treads, risers, etc. not exceeding 500mm wide, narrow widths not exceeding 500mm wide in general surfaces caused by openings or projections, all of which have been included in the areas of horizontal or vertical surfaces. No distinction has been made for finishes of differing thicknesses.

**14. <u>TILING</u>**

**MATERIALS**
**River Sand**: —is to be clean, sharp, coarse sand, free from all impurities, washed if so directed and complying with SANS Specification 1090.
**Plaster Sand**: — for wall backings is to be clean, sharp, free from impurities, washed if so directed and complying with SANS Specification 1090.
**Cement**: —unless otherwise specified, is to be Portland cement of normal setting quality complying with SANS Specification 47l and must be used fresh. Cement containing more than 15 % blast furnace slag will not be permitted to be used
**Water**: —is to be clean, fresh and free from injurious amounts of acids, alkalis and other organic substances.
**MEASUREMENT OF CONSTITUENT PARTS OF BACKINGS, ETC**.: — Cement and sand
are to be measured exactly by means of gauge boxes or purpose made wheelbarrows. Part filling or heaping of normal wheelbarrows will not be permitted:
Water is to be accurately measured for each batch to approval.
Waterproofing compounds, where specified, are to be added to the mixture in the quantities recommended by and in strict accordance with the manufacturers' instructions.

**PREPARATION OF SURFACES**: — Prior to the application of the backing for tiles, the surfaces of the new or existing concrete, brickwork, etc. are to be thoroughly sloshed, etc. as necessary to ensure a satisfactory bond. The Contractor shall be held responsible for the proper and adequate preparation of the surfaces and any work which results in failure in this regard must be made good at the Contractor's expense to the satisfaction of the Department.

**GLAZED CERAMIC WALL TILES AND FITTINGS**: — shall comply with SANS Specification 22 of selected grade, free from defects and blemishes and of uniform colour.

Rates are to include for either bedding tiles on and including a solid cement mortar backing consisting of one part cement to three parts sand on brickwork or concrete, or fixed with an approved tile adhesive on and including a coat of cement plaster consisting of one part cement to five parts sand and finished to a surface to receive tiles.

Tiles are to have vertical and horizontal joints continuous with all joints solidly flushed up in neat white cement.

**MOSAICS**: — Glass or ceramic mosaics are to be of approved South African manufacture of the sizes and colours specified, fixed to paper panels for ease of handling.

Mosaics are to be bedded to a true even surface on and including a solid cement mortar backing consisting of one part cement and three parts sand on brickwork or concrete, or fixed with an approved mosaic adhesive on and including a coat of cement plaster consisting of one part cement to three parts sand finished to a surface to receive mosaics.

After setting, the paper panels are to be removed and all joints are to be solidly flushed up in neat white cement.

Samples of mosaics are to be submitted to the Department for approval before any work is put in hand.

**UNGLAZED CERAMIC FLOOR TILES AND FITTINGS**: — are to be unglazed acid and alkali resistant tiles and fittings of the types specified in the items, and of approved manufacture, uniform in size, shape and colour, free from cracks, twists and other defects and equal to samples to be deposited with and approved by the Department.

Floor tiles are to be laid with maximum 10mm wide joints continuous in both directions on and including a 15mm thick cement mortar bed consisting of one part cement to three parts sand, unless otherwise specified, to true levels and grades with the joints raked out and grouted up solid and flush pointed with an approved epoxy jointing compound.

Floor tiles are to be set out so as to have no long edges of tiles cut to suit room size.

**RATES**: — for tiles, mosaics, etc. are to include for all necessary preparation of surfaces, for laying in accordance with the manufacturer's instructions, all square cutting and waste and fitting, protecting from damage and cleaning down at completion.

Rates for tiles are also to include for laying, bedding, jointing and pointing as described and in accordance with SANS Code of Practice 0107 where applicable.

Rates for treads, risers, sills, copings, cappings, skirting etc. are to include for pointing to exposed edges and projecting soffits.

No distinction has been made for brick or concrete surfaces.

**TRANSITION TRIMS:-**

Aluminium Wide Tile-In Ramp splayed transition trims to be used at junction between ceramic / porcelain tiles and vinyl sheeting.

**MOVEMENT JOINTS:-**

Aluminium Structural Screed joints bolted to slab to be capable of total movement of minimum of 5mm either way with flexible PVC Hospital Insert.

Movement joints to be in high traffic area's as "Migua" FV35/1500 or "Kirk" ASSJ390H of approved height with hospital insert bolted to slab before screeding.

Metal movement joints in low traffic area's with hospital insert strips..

## 15. DRAINAGE AND PLUMBING

**GENERALLY**: —The Standard Preambles for other trades, with reference to Excavations, Concrete, Brickwork and Plastering, and, in particular for the full description intent and meaning of the classification for excavations, are to apply equally to this trade.

**LICENSED DRAINLAYERS AND PLUMBERS:** — Only licensed drain layers shall be employed on any drainage work and licensed plumbers on plumbing work.

**SUBSOIL DRAINS**

**Unplasticised polyvinyl chloride (UPVC) slotted drainage pipes and fittings**: — shall be of approved manufacture jointed in accordance with the manufacturer's instructions.

**Pitch-fibre perforated or slotted drainage pipes and fittings**: shall comply with SANS Specification 921 and shall be jointed in accordance with the manufacturer's instructions.

**Filter fabric**: — shall be non-woven, spun bonded, needle punched and continuous polyester fabric, resistant to the effects of alkalis, acids, saline solution and sunlight.

**STORMWATER AND SOIL DRAIN PIPES**

**Reinforced concrete non-pressured pipes**: shall comply, with SANS Specification 677 and must be Type SC of the class specified with spigot and socket ends with rubber insertion ring or with ogee joints with approved rubber collars. Pipes must be marked with the manufacturer's name, trade name or registered trade mark, nominal bore, class and type, date of manufacture, the letter "R" denoting reinforced and the SANS mark. Joints shall be made in accordance with SANS Code of Practice 058.

**Unplasticised polyvinyl chloride (UPVC) drain and sewer pipes and fittings**: — shall comply with SANS Specification 791. Joins shall be made with fittings in accordance with SANS Code of Practice 058.

**CONCRETE BEDS AND ENCASEMENT TO DRAIN PIPES**: — Where pipes are required to be bedded on concrete, the bed of concrete shall be Class B, a minimum of 500mm wider than the diameter of the pipe, laid to correct falls and levels with recesses formed in same for pipe joints including all necessary formwork and any additional excavation. The barrel of the pipe shall then be bedded on a thin cement mortar (1:3) bed and laid to falls. After jointing, the recesses previously formed shall be filled in with concrete Class B and the haunching or surrounding completed.

Where pipes are fixed vertically they shall be encased in concrete Class B having a minimum thickness of 150mm around the pipe and carried up to ground level and shall include for any necessary formwork.

**PIPE LAYING**: — All drain and sewer pipes are to be laid to a straight line to even gradients and jointed in accordance with SANS Code of Practice 058 except in the case of polyethylene or unplasticised polyvinyl chloride drain and sewer piping which is to be in accordance with SANS Code of Practice 01 12.

Before laying, each pipe shall be examined to ensure that the bore is clean and free of any foreign matter and shall be tested for soundness by striking with a wooden mallet, and any cracked or damaged pipes shall be rejected. Ends of all pipes must be clean before

jointing. Immediately after jointing a tight fitting wad or scraper shall be drawn several times through the bore of the pipe to ensure that it is left clean and free from obstructions. Whenever work is suspended, the open ends of pipes and junctions must be temporarily plugged to prevent the entrance of rubbish during construction.

**GULLEY TRAPS**: — Gulley trap assemblies must be of the material specified with "P" or "S" trap, jointed to drain and with hopper head with vertical and side inlets, the head fitted with 190mm diameter cast iron gulley grating complying with SANS Specification 1115 laid loose in socket. The trap, hopper head and vertical pipe shall be set on and encased in concrete Class B having a minimum thickness of 150mm at any one part, carried up 75mm above ground level as kerb, dished down to grating and finished on all exposed surfaces in 1:3 cement plaster with angles rounded, including necessary excavation and formwork.

**GREASE TRAPS**: — Grease trap assemblies of vitrified clay must consist of outlet junction jointed to trap with side inlet. Access openings of trap and junction shall be fitted with vitrified clay stoppers laid loose in socket of trap and set in bitumen in socket of junction. The trap and junction and vertical pipe shall be set on and encased in concrete Class B having a minimum thickness of 150mm at any one part, carried up 75mm above ground level as kerb, dished down to grating and finished, on all exposed surfaces in 1:3 cement plaster with angles rounded, including necessary excavation and formwork.

**RODDING EYES**: — Where pipes are carried up in ramps for rodding eyes, the head of the pipe at ground level must be fitted with an **"A.B.C."** cast iron cover and frame, complying with SANS Specification 746, jointed to pipe, the frame rebated for and including cover with raised letters "CE" cast on same, secured to frame with gun-metal screws and with the whole encased in concrete Class B having a minimum thickness of 150mm at any one part, carried up 75mm above ground Level and finished on all exposed surfaces in 1:3 cement plaster with angles rounded, including necessary excavation and formwork,

**INSPECTION EYE BLOCKS**: — Where inspection eye fittings are provided in pipelines, the position of these inspection eyes must be registered and demarcated with concrete Class
C. block size 300 x 300 x 50mm thick finished on all exposed surfaces with 1:3 cement plaster with angles rounded and with sunk letters "I.E." formed in top and set in ground, including necessary excavation and formwork.

**SURFACE WATER CHANNELS**: —Concrete open surface water channels shall be formed with concrete Class B with segmental channel formed in same to the size and shape specified and finished on exposed surfaces in 1:3 cement plaster, steel towelled to a smooth even surface with all angles rounded, cast in lengths not exceeding 2m and laid to falls, including necessary excavation and formwork.

**GRATINGS FOR GULLEYS AND STORMWATER DRAINS AND CAST IRON SURFACE BOXES AND MANHOLE COVERS AND FRAMES**: — Cast iron or Polymer gratings for gulleys and storm water drains shall comply with SANS Specification 1115 and SANS 1882:2003 respectively.

Cast iron surface boxes and manhole covers and frames shall comply with SANS Specification 558.

All cast iron gratings, cast iron surface boxes and cast iron manhole covers and frame must be coated with approved preservative solution before leaving the manufacturer's works.

The masses stated are the combined mass of the grating and frame or the combined mass of the cover and frame.

**STORM WATER SUMPS, JUNCTION BOXES, MANHOLES, INSPECTION CHAMBERS, CABLE INSPECTION CHAMBERS AND VALVE CHAMBERS**: — shall be of the internal size specified and are to be constructed of one brick sides, unless otherwise specified, built
in 1:3 cement mortar on a 150mm thick concrete Class C bottom and finished on top with an 85mm thick pre-cast concrete Class C cover slab, reinforced as detailed and bedded in

cement mortar. The cover slab, except to junction boxes, is to have a rebated opening formed in same, suitable for and fitted with a cast iron orating and frame, or cover and frame, of the size and mass specified with the frame bedded in cement mortar. The bottom of the sump, manhole, etc. and the exposed surfaces of the cover slab are to be finished smooth in 1:3 cement plaster with angles rounded. The internal brick surfaces are to be faced with smooth facing bricks and pointed with flush joints.

Inspection chambers and manholes with an invert not exceeding 1m shall have an internal dimension of 470mm x 700mm and those exceeding 1m shall have an internal dimension of 920mm X 920mm. Where the invert of the hole exceeds 1m, a 150mm thick reinforced concrete Class C corbel slab, reinforced as detailed, with opening size 470mm x 700mm formed in same and finished smooth off the formwork, is to be built into the brick sides at a height not exceeding 1, 5 inches above the concrete bottom with the reduced manhole shaft built off the top of the corbel slab. Cast iron step irons spaced at 300mm staggered centres vertically are to be built into one side of all manholes with an invert exceeding 1m.

Where measured in number, rates for all sumps, manholes, etc. are to include for excavating to the depths required, taking precautions against collapse of sides of excavations, staging, ramming, pumping and baling to keep excavations free from water or mud, filling around and ramming and depositing and levelling spoil on site or carted away as directed. Ends of pipes are to be built through the sides of the sumps, manholes, etc. and rates are to include for this.

**SOIL DRAIN MANHOLES AND INSPECTION CHAMBERS**: —are to be of the internal diameter and inverts specified and are to be constructed of pre-cast reinforced concrete manhole ring sections with walls a minimum of 50mm thick, pre-cast reinforced concrete cover slabs and spacer pieces complying with SANS Specification 677. The joints for the ring sections shall be of the ogee type. The bottom shall be of concrete Class C-cast in- situ.

The placing of the concrete bottom and benching shall be carried out in three stages with the initial stage being the laying of the concrete bottom projecting 100mm beyond the external diameter of the manhole on which is laid the inspection eye pipe, branches, etc. The second stage comprises the laying of concrete within the manhole to the height of the pipes and around the perimeter of the bottom to a height of not less than 25mm above the collar of the pipe at the highest end. This annular base is to be shuttered to provide a horizontal setting for the first ring section which is to be firmly bedded in the wet concrete. The third stage comprises the laying of the benching within the initial ring section and finished in 1:3 cement plaster with all angles rounded. Thereafter, the ring sections of the required standard height are joined together to form the required depth, with all joints primed with “Bituprime” and sealed with “Bitujoint Putty”. A 125mm thick pre-cast reinforced concrete cover slab, rebated on underside to suit ring sections and with opening size 600mm x 600mm formed in same is to be bedded on top of the ring section. The shaft above the cover slab is to be constructed of either pre-cast reinforced concrete spacer units to suit the type of cast iron cover and frame specified, or one brick kerb walls faced internally with smooth facing bricks jointed with flush joints, and finished on top with an 85mm thick pre-cast concrete Class C cover stab, reinforced as detailed and bedded in cement mortar with the exposed surfaces finished smooth in 1:3 cement plaster with all angles rounded. The cover slab is to have a rebated opening formed in same suitable for and fitted with cast iron cover and frame of the size and mass specified, with the frame bedded in cement mortar.

**MANHOLE COVERS AND FRAMES:-** Cast iron, Concrete or Cultured Polymer covers and frames to be suitable for the area of usage.

**SOAK PITS**: — shall be of the lengths and widths specified and shall be a minimum of 900mm deep below the invert of the inlet pipe. A perforated pitch-fibre drainpipe, jointed to the inlet pipe and with other end capped, is to be laid level in a 19mm stone packing of a

minimum thickness of 15mm below and at sites of pipe and a minimum thickness of 150mm below the top of the pipe. The remainder of the soak pit is to be filled with stone graded

from 50mm to 75mm, to a level of 50mm above the top of the pipe. The stone is to be covered with corrugated asbestos cement sheets extending 150mm beyond the walls of the soak pit all round. The trench shall be backfilled above the sheeting to a minimum depth of 300mm lightly rammed with the final 100mm of backfilling being approved topsoil from the excavations.

**SEPTIC TANKS**: —shall be of the internal sizes specified and are to be constructed of one brick sides built in 1:3 cement mortar on 150mm thick concrete Class C bottom laid to falls. A half brick baffle wall finished 75mm below underside of concrete cover slab and with opening size 150 x 150mm high formed in wall is to be built in 1:3 cement mortar on the concrete bottom. A 115mm thick reinforced concrete Class C cover slab, reinforced as detailed, is to be cast in-situ on removable formwork and is to have two openings formed in same, each suitable either for and fitted with 600 x 450mm x 38 kg cast iron single seal manhole cover and frame, or for the shaft of the inspection chamber built off the cover slab in one, brick walls in 1:3 cement mortar with smooth face bricks internally, finished on top with 85mm thick pre-cast concrete Class C cover slab, reinforced as detailed and rebated for and fitted with 600 X 450mm X 38-kg cast iron single seal manhole cover and frame. The bottom and sides of the septic tank are to be finished in 1:3 cement plaster, 19mm thick, with an approved waterproofing compound added, with all internal angles coved to 50mm radius. Inlet and outlet chambers attached at either end of the septic tank shall be size 600 x 450mm internally, of the depth required and each shall be constructed of one brick walls built in 1:3 cement mortar on a concrete Class C bottom 150mm thick, or where extended above the top of the septic tank cover, built off the cover and finished on top with 85mm thick pre-cast concrete Class C cover slab, reinforced as detailed and bedded in cement mortar with the exposed surfaces finished smooth in 1:3 cement plaster with angles rounded. The cover slab is to have a rebated opening formed in same suitable for and fitted with a 600 x 450mm x 38 kg cast iron single seal manhole cover and frame. Chambers shall be provided with inspection eye pipes or bends, straight or curved channel sections, benched up to sides of chambers in concrete Class C, finished in 1:3 cement plaster with all angles rounded.

The inlet and outlet of the septic tank shall be formed of cast iron square junction piece with tail-pipe extending 300mm below water level in tank, built in through end walls and jointed to channels in inlet and outlet chambers.

**TESTING OF DRAINS, MANHOLES AND INSPECTION CHAMBERS:** — All drains, manholes and inspection chambers with the exception of subsoil drains shall be constructed so as to be watertight. No trenches shall be backfilled or pipes encased in concrete until the drains have been tested and approved. Any drains covered by the Contractor prior to testing shall be exposed at the Contractor's expense.

The Contractor shall give at least 24 hours notice of any particular length between manholes ready for testing. The drains shall not be tested until a period of 24 hours, or such other period as may be required, has been allowed for the pipe joints to set. The Contractor shall provide all necessary testing apparatus, expanding plugs, stoppers, water and any other materials and all labour that may be required for carrying out the tests.

The whole of the drainage system shall be tested using one or more of the following tests:-

(a) **Visual test—** Each length of pipe shall be inspected for invert level grade, direction and line. Internal inspection of the bore of the pipes shall be made using mirrors and a powerful source of light. The drains must be free of invert lips and the bases of the pipes must be straight.

(b) **Air test** — All openings in the drain shall be plugged and sealed and all associated traps filled with water and air pumped into the drains until a manometric pressure of 40mm is indicated, after which, without further pumping, the pressure shall not drop below 25mm for a period of at least 30 seconds.

After the entire drainage system has been completed, all plumbing fittings installed and permanently connected up, and traps filled with water, a final air test shall be applied to the whole system.

(c) **Water test**— All openings-in the drain, except the highest one, shall be plugged and sealed and the drain filled with water so that every part of the system is tested under a head of water of not less than 1.5m and not more than 3.5m. After allowing period of 10 minutes for initial absorption, the amount of water it shall be necessary to add to maintain the water level over the next 15 minutes shall not exceed a rate of 25 litres for 100mm diameter pipe and 3,75 litres for 150mm diameter pipe for 100m of drain and an equivalent rate for larger drains. In carrying out the water test, the head of water shall be obtained by providing temporary pipes, fittings, etc. wherever necessary or by such other method as may be approved.
In cases where the maximum head of water, owing to the gradient of the drains, would be exceeded in any section, inspection eyes at suitable intervals may be provided and the drain plugged, in order not to subject the lower portion of the drain to a greater head of water than that required. Drains must be free of air before testing.
(d) **Manhole and Inspection Chamber test** — The inlet and outlet pipe hose shall be plugged and sealed and the inspection chamber filled with water. After allowing the water to stabilise due to absorption, the water level should not fall more than 5mm in *2* hours.
**DEFECTS TO BE MADE GOOD**: — Should the drain system fail to withstand the above tests, all defects shall be made good and the tests repeated at the Contractor's expense until the whole system is sound and passed to the satisfaction of the Department. In making good, all defective parts shall be cut out and replaced with new. No patching of pipes, joints or connections will be permitted.

**SHEET METALWORK**: — generally is to be lapped 75mm at ends and 150mm at angles, unless otherwise specified. Rates for sheet metalwork shall include for all labour, cutting and waste, laps, seams, welts, angles, clips, tacks, soldered dots, riveting, soldering, brazing, burning, nailing, dressing and wedging as required. All measurements are net with no allowance being made for laps, seams, welts, angles, clips and tacks or waste in cutting. Where stepped flashings are described as to flat slope, the pitch of the roof to which they apply does not exceed 40 degrees
.
(a) **Galvanized sheet iron**: — shall be of an approved brand of the thickness specified after galvanising and having a galvanized coating of "Iscor Coating Designation Z450". Corroded or otherwise defective sheets shall not be used. All nailing or screwing shall be done with galvanized nails or screws.
(b) **Sheet aluminium**: — shall be of the thickness and quality specified. All nailing shall be done with aluminium alloy nails and all screwing done with stainless steel screws.
(c) **Sheet copper**: — shall be cold rolled sheet of the thickness and temper specified. Sheet copper for covering flat roofs and for valley and gutter linings, flashings, soakers, etc. shall be of dead-soft temper and for eaves gutters, rainwater pipes and other unsupported or semi self-supported work shall be of half-hard temper. All nailing shall be done with copper or copper alloy nails and all screwing done with brass screws.
(d) **Sheet lead**: — shall be best milled sheet lead of the full mass specified and of equal thickness throughout and must comply with SANS Specification 1178.
**LININGS TO VALLEYS**: — shall be of the material specified, lapped 200mm at ends and dressed up on to purlins or battens at sides of valleys with edges bent back to form open beads.
**LININGS TO SECRET GUTTERS**: — at back of chimney stacks and wall abutments and at raking intersections of walls and roofs shall be of the material specified, turned 100mm up vertical surfaces and dressed 250mm up roof slope and on to purlin or batten at edge.

**SOAKERS:** — to slate covered roofs shall be of galvanized sheet iron or sheet copper of 0.6mm thickness, 450mm wide to closed valleys and 250mm wide to raking intersections of roofs with vertical wall and chimney stack abutments and turned 75mm up vertical surfaces. Soakers shall be 75mm longer than the gauge of the slate roofing.

**UNDER-FLASHINGS**: — to all iron roofs and where specified to slate or tiled roofs shall be 0.6mm thickness galvanized sheet iron. Flashings to asbestos cement roofs shall be asbestos cement preformed units fitted in accordance with the manufacturer's instructions. Where specified, copper flashings shall be formed from sheet of 0.6mm thickness and aluminium flashings shall be formed from 1200-H4 quality sheet of 0.6mm thickness. Lead flashings, where specified, shall be formed from sheet having a mass of 24 kg/in 2.

**COVER FLASHINGS**: — shall be either galvanized sheet iron, copper or aluminium, as specified, of 0.6mm thickness fitted over under-flashing, stepped where required on rake and with top edge bent and wedged 25mm deep into joint of brickwork or groove formed in concrete face and flush pointed in 1:3 cement mortar.

**FLASHINGS AROUND PIPES THROUGH ROOF COVERINGS**

(a) Pipes through preformed sheet steel roofing shall be flashed around with 0.6mm galvanized sheet iron apron pop-riveted to top of roofing wit edges cut and dressed to profile of roofing, soldered all round and with conical sheet iron 'u' stand, riveted and soldered at joint and at base to apron. The top of the conical upstand is to be fixed around the pipe with 25mm x 3mm galvanized mild steel strap wrapped around the pipe and fixed with a galvanized steel gutter bolt.

(b) Pipes through fibre cement roofing shall be flashed around with 24 kg/in 2 lead a on dressed into corrugations, bedded in mastic and bolted to roof sheeting with galvanized steel gutter bolts and with conical lead upstand, wiped on at joint with apron, and secured around pipe with copper wire.

(c) Pipes through slate or tile roofing shall be flashed around with 24 kg/in 2 lead apron dressed to profile of slates or tiles with top edge of lead apron dressed over back edge of slate or tile under overlap of slates or tiles. A conical lead upstand, wiped on at joint with apron, is to be secured around the pipe with copper wire.

(d) Pipes through pre-printed or embossed sheet steel or aluminium roofing shall be flashed around with flexible glass-fibre reinforced waterproofing dressed to profile of roofing, pop-riveted around edges to roofing and dressed up and around pipe. The waterproof is to be finished in a colour to match that of the roofing material.

**RAINWATER PIPES GENERALLY:**

Full bore outlets for flat roofs are not allowed. Where flat roofs are specified, it is preferred to have a drain along the edges into a common outlet. Where roof cover is of 'Chromodek' sheets, the preferred guttering is of the same material in the same colour in continuous lengths.

(a) **Unplasticised polyvinyl chloride (UPVC) rainwater pipes and accessories** shall comply with SANS Specification 967 and must be fixed clear of the finished wall face on stock pattern brackets in accordance with the manufacturer's instructions.

(b) **Galvanized mild steel rainwater pipes**, shall be medium quality screwed and socketed normalised welded mild steel pipes, galvanized inside and outside, and shall comply with SANS Specification 62.

Fittings for galvanized mild steel pipes shall comply with SANS Specification 509. The screwed joints must be made with lead paint and hemp or approved thread sealing tape. The pipes must be fixed clear of the finished wall face with galvanized cast iron hinged

holderbats built into walls at not exceeding 2m centres in 1:3 cement mortar.

**EAVES GUTTERS**

a) **Galvanized sheet iron gutters, rainwater heads, etc.** shall be formed from 0.6mm sheet and must have beaded edges with all laps riveted and soldered. Corners must be reinforced with 0.6mm X 50mm wide galvanized sheet iron strips and must be soldered across the inside of the angles.

Gutters must be laid to even falls on approved galvanized mild steel gutter brackets screwed to roof timbers at approximately 1m centres. Half round pattern gutters shall be bolted to each bracket with 6mm galvanized gutter bolt fitted close to the beaded edge. Rectangular pattern gutters shall be fixed at each bracket with galvanized mild steel long- screw with 1mm thick galvanized sheet iron spacer tube.

(b) **Fibre cement gutters and accessories** shall be of approved manufacture, not less than 6mm thick, with spigot and socket joints made in an approved mastic compound in accordance with the manufacturer's instructions. Gutters must be laid to even falls on approved aluminium alloy or stock asbestos cement brackets screwed to roof timbers at the manufacturer's recommended spacings.

(c) **Unplasticised polyvinyl chloride (UPVC) gutters and accessories** shall comply with SANS Specification 11 and must be laid to falls and fixed on brackets in accordance with the manufacturer's instructions.

**SANITARY PLUMBING AND FITTINGS, WASTE, VENTILATION AND ANTI-SIPHON PIPES**

(a) **Unplasticised polyvinyl chloride (UPVC) pipes and fittings** shall be of approved manufacture marked with the manufacturer's name and trade name, the nominal bore and the South African Bureau of Standards mark and shall comply with SANS Specification 967. Joints shall be made with injection moulded fittings in accordance with the manufacture's instructions and SANS Code of Practice 0112. The pipes must be fixed clear of the finished wall face with aluminium alloy holderbats fitted with plastic cushion strips with the holderbats fixed to plugs in wall.

(b) **Polypropylene pipes and fittings** shall be of approved manufacture and shall have a mechanical form of jointing. Pipes and fittings are to be fixed and jointed in accordance with the manufacturer's instructions.

(c) **Multilayed pipes** shall be of approved manufacture and shall have a mechanical form of jointing. Pipes and fittings are to be fixed and jointed in accordance with the manufacturer's instructions.

**SANITARY FITTINGS**: — All sanitary ware must comply with SANS 497 Specifications and be fitted with Ball-O-Cock valves in supply lines.

**Wash hand basins** shall be of white glazed fireclay or vitreous china of the type and size specified. Basins shall have an integral overflow to non patient treatment facilities and be fitted with 32mm chromium plated waste union with flange and grating, rubber plug on chromium plated brass chain and, where required, tap hole stopper cemented in.

**WC pans** shall be of white glazed fireclay or vitreous china of the type specified with 'S" or "P" trap with straight or side outlet and shall be fitted with single or double flap plastic seat as required, secured to pan with concealed brass holding down bolts. Pans shall be bedded on the concrete floors in 1:3 cement mortars. Pans in seclusion rooms and other public areas to be 'Gypsy' vandal proof – or other approved.

**Glazed ceramic urinals** of the bowl or stall type shall be of white glazed fireclay or vitreous china. Bowl urinals shall be fitted with 40mm chromium plated waste union, with flange and

domical grating and with spreader with flush pipe connector. Stall urinals shall be fitted with 75mm chromium plated waste union with flange and hinged domed grating and with spreader with flush pipe connector.
**Flushing cisterns** shall be as specified, either of white porcelain enamelled cast iron, white glazed fireclay, vitreous china or black plastic complying with SANS Specification 821, each with body and cover. Cisterns shall be a maximum of 11 litre capacity and the flushing apparatus shall be of brass, copper or other corrosion resistant metal, PVC or other approved plastic or of an approved ceramic material. All cistern lids must be able to be **screwed** down. Connections for flush pipe, inlet and overflow pipe must be provided in the body. Cisterns shall be fitted with 15mm brass ball valve with copper, PVC or polystyrene ball and with either chromium plated operating lever handle or galvanized steel pull chain and handle. A galvanized, white enamelled or chromium plated steel or copper flush pipe, of the required length, as specified, is to be jointed to the flush pipe connection on the body of the cistern and in the case of WC pans is to be fixed to the inlet of the pan with an approved patent adaptor. From the overflow connection on each cistern a 22mm copper overflow pipe, bent as required, shall be taken through wall to discharge externally, with ends splay cut and projecting 50mm beyond wall face, or where this is not possible, bent to discharge into WC pan.
**Baths** shall be enamelled cast iron baths of the type and size specified, holed for and fitted with chromium plated brass overflow union with grating, 40mm chromium plated brass waste union with flange and grating, rubber plug on chromium plated brass chain and fitted with adjustable cast iron feet. The fall along bottom of baths from head ends to outlets must be adequate for complete emptying.
Stainless steel sinks and drainers shall be of the types and sizes specified with exposed surfaces buffed to a satin finish and sound deadened on underside by application of an approved sound deadening coating. Splashbacks with tiling keys shall be provided at back and at ends against walls or as specified. Sink bowls are to be pressed out of single sheets with complete drainage to outlets and each bowl is to be fitted with integral built-in overflow with chromium plated brass grating and 40mm recessed waste outlets with chromium plated brass waste union with grating, rubber plug and chromium plated brass chain. Sink bowls, unless otherwise specified, are to be 450 x 355 x 140mm deep. Drainers are to be pressed out of single sheets and are to have pressed flutes to give complete drainage.
(a) For domestic use — Sinks shall comply with SANS Specification 242 and shall be manufactured from A.I.S.I. Type 430 stainless steel 0.8mm thick for units not exceeding 2,4m long and from stainless steel 1.2mm thick for units exceeding 2,4m Long. -
(b) For hospital use and laboratories — Sinks shall be manufactured from A.I.S.1. Type 304 stainless steel 0.9mm thick for units not exceeding 2.4m long and from stainless steel
1.2mm thick for units exceeding 2.4m long.
**Stainless steel wash hand basins and wash troughs** shall be of the types and sizes specified complying with SANS Specification 906, with exposed surfaces buffed to a satin finish and sound deadened on underside by application of an approved sound deadening coating. Each basin or wash trough in non patient treatment area's are to be fitted with integral built-in overflow with chromium plated brass grating and 40mm recessed waste outlet with chromium plated brass waste union with grating, rubber plug and chromium plated brass chain.
**Stainless steel urinals** shall be of the types and sizes specified complying with SANS Specification 924 and shall be manufactured from A.I.S.I. Type 304 stainless steel, 1.2mm thick, buffed to a satin finish and sound deadened at back by application of an approved sound deadening coating. The back and sides of urinals are to be made rigid by means of integral pressed ribs or by bowing. Edges at sides and top are to have plaster key. Tread plates are to be ribbed and the front edges are to be stiffened and bent to form key for floor finish. The trough shall be a minimum of 125mm wide and half round in section with all corners radiused and shall fall to ensure complete drainage to 75mm recessed outlet with

chromium plated domed hinged grating and frame.

**RATES FOR SANITARY WARE**: — shall include for the supply and fixing of the units as specified and for cleaning, washing and leaving in a satisfactory condition on completion.

**BELOW GROUND WATER RETICULATION**

**Unplasticised polyvinyl chloride (UPVC) piping and fittings** shall be of approved manufacture complying with SANS Specification 966. Pipes must be of the class specified and must be marked with the manufacturer's name, trade name or registered trademark, nominal diameter, class reference and the SANS mark. Pipes shall be laid and jointed in accordance with the manufacturer's instructions.

**High density polyethylene (HDPE) piping** shall be of approved manufacture complying with SANS Specification 533 and shall be of the class specified, laid and jointed in accordance with the manufacturer's instructions. Piping must be jointed with compression fittings with compression rings and coupling nuts.

**High Density Polyethylene / Polypropylene / Multilayed piping** shall be of approved manufacture, complying with SANS Specification 15875-1-2004 & 2/2003 & 1315, laid and jointed in accordance with the manufacturer's instructions.

**Copper piping** shall be of approved manufacture complying with SANS Specification 460 and shall be of Class 2. Pipes must be jointed with brass compression fittings with compression rings and coupling nuts complying with SANS Specification 1067 Part I Type 'A'. Copper piping must be bent, where required, with an approved bending machine.

**ABOVE GROUND WATER SUPPLIES**

**Colour Coding Cold Water Supply** the exposed piping for this non potable (recycled) water shall be colour banded Brilliant Green (B49) / Yellow Band(H10).

The other exposed piping for potable (drinkable) water shall be colour banded Brilliant Green (B49) / Blue Band(F29)

**Galvanized mild steel piping for water supplies** shall be medium quality screwed and socketed normalised welded mild steel pipe, galvanized inside and outside, and shall comply with SANS Specification 62. Fittings to galvanized mild steel piping shall be steel pipe fittings complying with SANS Specification 62 or malleable cast iron fittings complying with SANS Specification 509.

**Copper piping** shall be of approved manufacture, complying with SANS Specification 460 and shall be of Class 2 – fixed and jointed in accordance with the manufacturer's instructions.

Class 2 copper piping must be jointed with brass compression fittings with compression rings and coupling nuts complying with SANS Specification 1067 part I Type 'A'.

**Polypropylene / Multilayed Piping** shall be of approved manufacture, complying with SANS Specification 1315, laid and jointed in accordance with the manufacturer's instructions. This applies to hot and cold water supply within ceiling spaces also.

**Stainless steel piping** shall be of approved manufacture, complying with SANS Specification 4127 and shall be A.I.S.I. Type 304 L. Fittings to stainless steel piping not exceeding 50mm nominal bore shall be brass compression fittings with compression rings and coupling nuts.

Piping exceeding 50mm nominal bore shall be welded piping with 1.5mm wall thickness, unless otherwise stated, and of A.I.S.I. Type 316 stainless steel. Joints are to comprise approved A.I.S.I. Type 316 stainless steel pressed collars welded to ends of pipes and fittings with loose galvanized mild steel slip-on flanges complete with galvanized mild steel bolts, nuts and washers, and neoprene gaskets. Fittings must be A.I.S.I. Type 316

stainless steel butt weld fittings.
Phosphoric acid based fluxes must be used for all welded joints which are to be argon arc TIG welded using Type 316 filler rods, with the welds treated with suitable pickling compound.
**WATER TAPS AND VALVES**: — Water taps, stopcocks, ball-o-cocks and wheel valves shall be of approved manufacture complying with SANS Specification 226.
Ball valves with brass valve and copper or plastic ball float shall be of approved manufacture complying with SANS Specification 1056. Plastic floats when supplied, must comply with SANS Specification 1006.
Full Bore Teflon Seated Ball Valve shall be of approved manufacture complying with SANS Specification 664.
Valves shall be clockwise closing with non-rising, cap-fitted spindles and flanked connections and of the class specified.
Pressure reducing valves shall be of approved manufacture complying with SANS Specification 198.
**FIXING OF WATER PIPES**: — Galvanized mild steel water piping shall be fixed, unless otherwise described, to walls or ceilings with galvanized malleable iron holderbats (school board pattern), built into walls in 1:3 cement mortar. Pipes shall be fixed to timber work with galvanized mild steel pipe clips screwed on.
Copper and stainless steel water piping shall be fixed, unless otherwise described, to walls or ceilings with brass holderbats (school board pattern) built into walls in 1:3 cement mortar. Pipes shall be fixed to timber work with brass or copper pipe clips screwed on.
**Polypropylene / Multilayed Piping -** shall be fixed to walls according to manufacturers recommendations.
**CONCRETE THRUST AND ANCHOR BLOCKS**: — shall be of the sizes required and provided where directed to anchor the water pipelines against the thrust due to hydrostatic pressure. Concrete blocks shall be cast against the undisturbed face of the excavation. Backfilling behind the thrust face of the block will not be permitted.
**TESTING OF WATER MAINS:** — The whole of the water reticulation shall be subjected to a hydraulic test pressure 1.5 times the maximum working pressure of the pipeline. Testing of pipelines may only commence after the installation of all anchor blocks, valves and fittings have been completed. Testing shall be carried out between installed sluice valves whenever possible. Where this is not possible the ends of the pipes shall be sealed with end caps properly held in place with temporary props.
The tests shall be carried out on lengths not exceeding 300 metres.
The pipeline shall be filled from the lowest end in order to expel the air at the upper end through special taps or through service connections, stand pipes, etc. When full the line shall be allowed to stand for 24 hours and any further accumulated air shall be expelled. The full test pressure shall then be applied and maintained for one hour, during which time the line will be examined for any leaks, movement at anchors and other defects. Any defective work is to be taken out and replaced at the Contractor's expense and the whole retested until found satisfactory.
The Contractor shall provide all necessary testing apparatus, temporary end caps, plugs, stoppers, special taps and any other materials that may be required, and all labour for carrying out the tests.
**EXCAVATIONS FOR PIPE TRENCHES**: — Excavations for pipe trenches, gulley traps, manholes, inspection chambers, valve, chamber, soakpits and septic tanks shall be to the

depth and gradients shown on the drawings using sight rails and boning rods and shall include for taking precautions against collapse of sides of excavations, staging, pumping and baling to keep the excavations free from water or mud and for filling in and ramming.

The bottoms of pipe trenches are to be excavated to even falls. The barrel of the pipe, except where it is laid on a sand or concrete bed, must rest on solid ground and hand-holds of sufficient size must be cut under pipe joints to enable the jointing and filleting to be properly performed. Any excavations taken out deeper than required shall be made up to the correct grade with well rammed earth. In intermediate or hard rock excavation and where a bedding is not specified, the trench bottom must be excavated 100mm deeper than required for the grade and be backfilled with well rammed earth.

The Contractor is to notify the Department when the trenches are ready for inspection and approval. Any work put in hand before approval has been given shall, if so required, be replaced with new at the Contractor's expense.

Notwithstanding such approval of the trench bottoms, any excavations which become waterlogged or otherwise spoilt after approval, shall be cleaned out and reformed at the Contractor's expense and to the satisfaction of the Department before any piping or sand or concrete beds are laid.

Depths of excavations as approved shall be checked and recorded by a Departmental Official and the Contractor before excavations are filled in.

For the purpose of any measurement, whatever size may have been excavated, excavations are taken as follows: — Trenches not exceeding 0.75mm deep shall be taken 0.5m wider than the internal diameter of the pipe. This width shall be increased by 75mm for each successive depth of 0,75m to a maximum of 1m wider than the internal diameter of the pipe.

**BACKFILLING:** — No trench shall be backfilled until the Department is satisfied that the works therein have been satisfactorily completed, tested and are ready for backfilling.

The backfilling around and 300mm above the pipe is to be of approved selected material, imported if necessary, free from rock or stone, carefully packed, watered and lightly rammed equally on either side of the pipe and then filled in above this level with suitable material from the excavations, watered and compacted in layers not exceeding 300mm thick with the top 300mm consolidated to dry density of not less than 95% MOD. A.A.S.H.O. density. Topsoil from the excavation is to be set aside and used in the final layer of backfilling.

Any disturbance of or damage to the pipes during backfilling must be made good by the contractor at his own expense.

All spoil from the excavations for trenches, etc. shall be deposited and levelled on site or carted away as directed. Any subsidence or depressions below the level of the adjacent ground shall be filled in, as and when necessary, until the end of the maintenance period.

**SIZES OF PIPES**: The diameters stated for galvanized mild steel piping, cast iron piping, vitrified clay piping and asbestos cement pressure piping (C.I.D.) are the nominal internal diameters. The diameters stated for all other pipes are nominal external diameters.

In the case of piping and fitting which are manufactured in imperial diameters, the size nearest the metric equivalent must be used.

**RATES FOR PIPES**: — Rates for all pipes, gutters, channels, etc. are to include for couplings in running lengths, joints, short lengths and cutting and fixing as required. Rates for mild -steel pipes shall include for all plain sockets and nipples. Where fittings have reduced ends or branches the fittings are described as "reduced" and the largest end or branch has been stated. The Contractor may use equal fittings with reducers or bushings if he so desires, but no claim for extras in this connection will be entertained.

**Rates for pipes fixed to walls, soffits of slabs, roof timbers, etc**. are to include for all

brackets, holderbats, pipe clips and approved extended hangers where pipes are required to be laid to falls and for plugging and screwing or for cutting and pinning or building in tails of holderbats.

**Rates for piping** are to include for cleaning down at completion, and in addition, the rate for stainless steel pining is to include for polishing exposed piping, all to the approval of the Department.

**RATES FOR CHASES, HOLES ETC**.: — are to include for making good to approval. The term "hole" is to include for sleeves where required through concrete work.

**FIRE EXTINGUISHERS**: — Where specified, carbon dioxide gas type fire extinguishers shall be 2.26kg type, complying with SANS Specification 889 and fixed in position on wall brackets screwed to and including 20mm thick chamfered and oiled wrot hardwood backboard, size 450mm x 100mm screwed to plugs in wall.

Where specified, dry powder type fire extinguishers shall be of 10 litre capacity, complying with SANS Specification 810 and fixed as before described on backboard size 1000mm x 200mm.

**FIRE HOSE REELS**: — shall be non-swinging rotary fire hose reels, complying with SANS Specification 543, with solid side discs and 25mm waterway at bracket incorporating rotary pressure joint to hose connection at hub and fitted with 25mm screwed malleable iron 'Sanders type A' valve with "S" grade diaphragm, connection for supply pipe with the handwheel clearly marked in red with arrows and the words "OPEN", "OOP".

The reel is to be secured to the wall with and including three steel anchor bolts and fitted with 30m length of 20mm internal diameter best quality reinforced red rubber non-kinkable hose with one end fixed to wheel hub connection and the other end fitted with 20mm chromium plated gunmetal adjustable "Centorium" type nozzle with hose threaded through and including chromium plated hose guide, designed to permit the hose to run out in any direction and the nozzle supported on and including chromium plated bracket fixed to wall.

For ease of removal, a union shall be installed between the valve and the reel.

**FIRE HYDRANTS:** — shall be of the wheel valve pattern with instantaneous coupling outlets, size 63.5mm or 70mm as stated on the drawings. Hydrants fixed in a horizontal position shall have oblique angle outlets and those fixed in a vertical or inclined position shall have right angle outlets. The materials used in the manufacture of the hydrants shall be as laid down for the manufacture of couplings, branch pipes, etc. in SANS Specification 1128, and the various requirements of instantaneous couplings and dimensions for 70mm outlets shall comply with the requirements for Morris instantaneous pattern couplings.

The valve spindle shall have a minimum diameter of 22mm with swivelling clack at one end fitted with first quality dexine or other approved washer, bedded on to a raised seat not less than 6mm wide, and the other end shall be machined to form a square shank of 15mm minimum thickness and a length corresponding with the thickness of the boss of the handwheel, the portion protruding from the boss shall be threaded and fitted with a washer and nut to hold the handwheel firmly in place. Valve inlet shall be male screwed 80mm Whitworth pipe thread, and outlet shall be fitted with approved India-rubber coupling gasket.

The internal diameter of the valve body shall be not less than 95mm in the case of 63.5mm outlets or 100mm in the case of 70mm outlets.

The valve hand wheel shall have an overall diameter of 165mm and the rim shall be of oval cross-section and shall have the words "OPEN" and "OOP" together with direction arrows embossed on the face.

All hexagonal faces shall be machined and all exposed surfaces of the valve and the wheel periphery shall be buffed and polished. Parts of the wheel not polished shall be painted two coats bright red high gloss paint.

The completed hydrant valve shall be guaranteed hydraulically tested by the manufacture to a pressure of 35 bar and shall be badged or stamped accordingly with the manufacturer's

name or symbol and the words “TESTED 35 bar”.

**16. GLAZING**

**MATERIALS**: — Glass shall conform to the requirements of the relevant current British Standards Specification for the respective materials.

Clear glass shall be float quality glass.

Silvered glass mirror to comply with SANS Specification 1236 Class A.

Toughened safety glass 15 to be “Armourplated” float quality safety glass of the thickness specified and as manufactured by Armourplate Safety Glass (Pty) Ltd. or other approved, and glazed to sashes, etc. in strict accordance with the manufacturer’s instructions.

All toughened safety glass is to have the manufacturer’s name or motif sand-blasted in one corner of each pane

Laminated safety glass is to be float quality normal strength glass, unless otherwise stated, and of the type specified and as manufactured by Shatterprufe Safety Glass Co. (Pty) Ltd., or other approved, and glazed to sashes, etc. in strict accordance with the manufacturer’s instructions.

All laminated safety Glass is to have the manufacturer’s name or motif sand-blasted in one corner of each pane.

All glass is to be free from imperfections and is to be left in a thoroughly clean condition on completion.

No glazing is permitted in Patient Treatment area’s below 1 (one) meter.

**GLAZING**: — The glazing and fixing of glass in buildings shall be in accordance with SANS Code of practice 0317.

Glass panes shall have adequate glazing clearance between edges of glass and the rebates.

Putty for glazing shall comply with SANS Specification 680 type 1 for glazing in wood and type 2 for glazing in steel.

Putty for glazing in natural finished wood shall be tinted to match the colour of the wood. Putty to be mixed with a hardener to allow for painting within +/- 3 days. Putty for glazing in aluminium windows shall be tinted to match the aluminium or anodised aluminium where required.

All rebates, other than those in natural finished hardwoods, are to be primed before glazing. Glass fixed with glazing beads shall be well bedded in back putty in the rebates.

Putty shall be carefully trimmed and cleaned off with front putty worked to within 3mm of the sight lines.

**RATES**: — Rates for glass generally shall include for preparing the rebates, etc. all putty, sprigs, clips, etc. as required and all cutting.

**Rates for toughened and laminated glass** shall include in addition for all necessary spacing and setting blocks in accordance with the manufacturer’s requirements.

**17. PAINTING**

**MATERIALS**: — Proprietary materials where specified are to be of the brand specified or other approved by the Department.

All primers, emulsion paints, enamels, stains, varnishes, etc. are to comply with the relevant SANS Specification.

Paints, etc. shall be suitable for application on the surfaces to which they are being applied and those used externally shall be of exterior quality or suitable for exterior use.
For any particular work the priming coat and subsequent coats of paint are to be executed with paints from the same manufacturer and in accordance with that manufacturer's instructions.
The materials are to be brought to the site in unopened containers and no adulteration will be permitted, except thinners of a quantity and quality directed by the manufacturer.
The Department shall at all times be permitted to take samples for testing purposes from open containers of any brand of paint being used on the work.
All materials, if and when required by the Department, will be subject to tests by the South African Bureau of Standards, and the cost of such tests, should the material under test not meet the requirements of this specification, shall be borne by the Contractor. Fillers and stoppings are to be suitable for use with the material being filled or stopped and to the approval of the Department.
**PREPARATORY WORK**: — All new and existing surfaces are to be thoroughly dry and are to be cleaned of all dust, dirt, grease, oil, rust, scale, efflorescence, fungus, loose or flaking material, etc. rubbed down, stopped, filled, knotted and sanded smooth as required in accordance with the paint manufacturer's recommendations and to the approval of the Department prior to the application of paint, etc.
Ceilings are to have nail heads, including those to cornices and cover strips, primed and stopped up as necessary and rubbed down smooth.
Asbestos cement shall be primed with an approved alkali resistant primer before the application of subsequent coats which are not, in themselves, alkali resistant.
Iron, steel and other ferrous metals shall be cleaned in accordance with SANS Code of Practice 064 to remove rust, scale, grease, oil, etc. and the surface brought to a bright metallic condition.
Galvanized iron and zinc shall be cleaned in accordance with SANS Code of Practice 062 to remove the manufacturer's temporary protective coating, white rust, etc.
Other non-ferrous metals shall be thoroughly cleaned to remove all milling oils, temporary protective coatings, etc. and the surface abraded with fine water-paper and white spirit.
Woodwork to be painted shall have all knots and resinous areas treated with an approved knotting, the surface shall then be primed and all holes, etc. stopped and rubbed down smooth,
Woodwork to be oiled, stained, varnished, etc. shall be free of all stains, pencil marks and other surface discolorations and all holes, etc. stopped with tinted stopping and rubbed down smooth.
In preparing existing glazed sashes and sash doors, all loose putty is to be removed, the rebates primed and glass re-sprigged and re-puttied as necessary before the painting is commenced.
Previously distempered or lime washed surfaces to receive any other type of paint, are to have the existing distemper or lime wash completely removed by scraping or wire brushing and the surf aces treated with an approved bonding liquid.
Where existing paint film are in good condition any flaking or bared patches are to be properly feathered into the surrounding paint and spot primed as necessary.

Where existing paint films are in poor condition and require to be removed completely, they are to be removed by means of wire brushing, paint remover, burning off, or other approved method. Paint removers shall be free of wax and caustic substances and shall preferably be of water rinseable type. When burning off paint from wood, care must be taken to avoid charring the wood.
The final state of preparatory work to existing decorated surfaces shall in all cases produce in the finished decorated surfaces a condition similar to new work.
The Contractor will be held responsible for the proper and adequate preparation of the surfaces and any work which fails to meet the manufacturer's recommendations must be made good at the Contractor's expense to the satisfaction of the Department.
**APPLICATION OF PAINTS, ETC**.: — Painting may be carried out by brush, roller or spray as recommended by the manufacturer and to the approval of the Department. All paints, etc. are to be applied in strict accordance with the manufacturer's instructions. Each coat of paint is to be adequately and permanently keyed onto the previous coat or surface and shall be evenly distributed and continuous and shall dry to a smooth film, free from sags, runs or other imperfections. Each coat of paint is to be of a colour distinctive from previous or succeeding coats.
All painting must be done in accordance with a colour scheme which will be provided by the Department, and rates for painting etc. are to include for all cutting in of contrasting colours and masking as required. No distinction has been made where more than one colour of the same material is required on the walls or ceiling of the same room.
Samples of colours for the final coats are to be prepared in all cases to the approval of the Department and all work must be finished to the approved colours.
Backs of wood door and similar frames an the surfaces of other new or prefixed joinery in contact with brickwork, etc. and built in as the work proceeds, shall be primed or sealed before building in to prevent moisture seeping into the wood from the mortar bedding.
Tongued and grooved and rebated edges of boards in batten doors and other such like inaccessible parts of new joinery shall, before assembly, be primed, or where the joinery is to receive a finish other than paint, be given one coat of such other finishing material.
All new external structural timbers shall be primed before the timbers are fixed in position and shall include all surfaces such as backs of fascias and barge boards.
**RATES**: — Rates for painting, etc. are to include for all preparatory work, and where spraying is employed, are to include or adequately masking all surrounding areas.
Where diameters of pipes are stated these are the nominal internal diameters, and rates for painting pipes are to include for painting the holderbats, hangers, clips, etc. supporting the pipes.
Rates are to include for providing all necessary dust sheets, covers, etc. taking all necessary precautions to prevent marking the surfaces of joinery, walls, floors, glass, electrical fittings, etc. All surfaces disfigured or otherwise damaged shall be completely renovated or replaced as necessary to the approval of the Department at the Contractor's own expense.

## 18. ROADWORK

The Contractor is referred to the preambles for "Earthworks" with particular reference to the full description, intent and meaning of the classification for excavations and the preambles for "Concrete, Formwork and Reinforcement"

The construction of the roads is to be carried out by an approved Specialist Sub-Contractor in accordance with the following specifications and all to the approval of the Department.

**SUB-GRADE**: — All materials placed in the sub-grade layer which is defined as being the 150mm thick layer immediately below the sub-base or the base course (where no sub-base is specified), shall conform to the following specification: —

(a) Minimum C.B.R. at 93% Mod. A.A.S.H.O. density = 10 %

(b) Maximum C.B.R. Swell = 1.5 %

(c) Maximum Plasticity Index if:

more than 30% passes the 2mm sieve = 12 less than 30% passes the 2mm sieve = 16

The sub-grade layer in cut areas shall be treated in place either to achieve a uniform standard of compaction or to break up undesirable formations of hard rock.

In the case of materials other than hard rock, treatment in place shall consist of scarifying or otherwise loosening to a depth of 150mm and re-compacting to a density of 93 % Mod. A.A.S.H.O. where directed, with the material stabilised in place before compacting.

In hard rock, treatment in place shall consist of thoroughly loosening to a depth of 450mm by rip in or blasting and then sized by rolling or knapping until the maximum dimension of any spall shall be not more than 300mm.

Compaction of the rock in the sub-grade shall be achieved by spreading and sorting by bulldozer to a reasonable uniform thickness with sufficient fine material added to fill the voids and bind the surface.

Compaction shall be achieved by means of a vibratory roller until the Department is satisfied that the mass is sufficiently dense, to provide a stable sub-grade layer.

Density tests shall be carried out at the minimum rate of one test per every 500$m^2$ of sub- grade area or not more than 50m apart but not less than four tests for smaller areas and shall assess the full layer thickness. The costs of such control tests shall be included in the Contractor's rate for sub-grade treatment. The Department may; at its discretion, arrange for independent check tests to be performed, but the costs of the tests in this instance will be borne by the Administration.

Processing of the material will be measured under the relevant items. An approved total weed killer shall be applied during the formation of the sub-grade. The rate of application shall be in accordance with the manufacturer's specification.

Rates shall include for the supply, delivery, spreading and stabilisation with lime, if required, and compacting and shaping to correct lines and levels.

The lime and method of mixing and watering shall be as described in the specification for stabilisation.

**SUB-BASE**: — All material placed in the sub-base layer, which is defined as being that layer of 150mm thickness immediately below the base course layer, shall conform to the following specification: —

| | Unstabilised | Stabilised |
|---|---|---|
| Minimum C.B.R. at 95 % Mod. A.A.S.H.O. density | 70% | 50% |
| Minimum C.B.R. Swell | 0, 5% | 0, 5% |
| Maximum Plasticity Index | 10 | 10 |
| Minimum Liquid Limit | 35% | 35% |
| Maximum size of aggregate | 63 m | 63m m |
| Material passing the No. 75 micrometer sieve shall not exceed | 25 % | |
| Minimum relative compaction in place | 95 % Mod. A.A.S.H.O. | |

Combined coarse and fine sand density fractions shall exceed 35 % of the soil mortar

Unless otherwise specified, the responsibility for obtaining material that conforms to the above specification rests with the Contractor who will be required to perform his own tests to prove compliance, and to submit samples to the Department before the material is delivered on site. Further control tests will be required by the Department during the placing and compaction of the material, the locations of which will be selected at random.

Should the Contractor wish to use material from the site excavations, he shall first obtain the approval of the Department. His rates shall in this case include for the selection and stockpiling.

Density tests shall be carried out at the minimum rate as specified for the sub-grade layer.

The layer shall be finished off to present a uniform texture and tightly bonded surface.

Rates shall include for the supply, delivery, spreading and stabilisation with lime, if required, and compacting and shaping to correct lines and levels.

The lime and method of mixing and watering shall be as described in the specification for stabilisation.

The finished surface shall be within 20mm of the design level. The finished width shall not be less than the design width. The average of five thickness tests at the rate of one test for every 200m$^2$ of surface shall not be less than 150mm and at any point not less than 130mm.

The surface finish when measured under a 3m straight edge shall have no slacks or bumps greater than 5mm.

The cost of the density control tests shall be included in the Contractor's rate for sub-base construction. The Department, at his discretion, may arrange for independent check tests to be conducted, and the costs in these instances will be borne by the Administration.

**STABILISATION**: — The stabilisation agent shall be slaked lime of the calcium type conforming to the requirements of SANS Specification 824.

The rate of application shall conform to the design rate and all materials to be stabilised shall be approved by the Department before processing.

The material shall be spread in a uniformly thick loose layer over the full area and thoroughly dried by scarifying or blading with a grader to ensure exposure to the air of all particles and to ensure thorough mixing to obtain a uniform grading of the material.
When the material has been approved as being ready for stabilising it shall be lightly rolled to facilitate the spreading of the lime. The lime shall be evenly applied to the surface, preferably by mechanical spreader, at the specified rate and thoroughly mixed by rotavator or disc harrow until a uniform integrated mixture of uniform colour is obtained over the full depth of the layer.
Before mixing is commenced, the Contractor shall satisfy the Department that the lime has been applied at the specified rate.

Immediately after the lime has been mixed in, water shall be added in small increments by suitable watering equipment and mixed into the layer until the required water content has been obtained which shall not exceed the Mod. A.A.S.H.O. optimum plus 2%:

The efficiency of the spreading and mixing shall be measured by Lime Determination Test according to A.S.T.M.D. Test Number 3155/1973 or the California Test Method No. 338-B July 1996. Only where the result from every 15 tests at locations selected by the Department indicate that more than 90 % of the layer has a time content exceeding 60 % of the nominal lime content will the work be accepted, provided that the coefficient of variation shall not be greater than 25%.
The test positions shall be spaced at one for every 100m$^2$ of surface area, but shall not be spaced, greater than 20m apart

**BASE COURSE**: — When the sub-grade has been prepared and approved, the base course, consisting of one of the following, shall be formed to the compacted thickness specified.

**Crusher Run Base Course**
Crusher-run base course shall be fresh dolerite, hard blue tillite, quartzite, fresh granite, fresh basalt or other stone which meets the following specifications.

**TABLE F: CRUSHER RUN BASE COURSE: STONE SPECIFICATIONS**

| Sieve Size | % Passing |
|---|---|
| 37.5mm | 100 |
| 26.5mm | 82 - 95 |
| 19.1mm | 70 - 85 |
| 13.2mm | 58 - 75 |
| 4.75mm | 34 - 55 |
| **Sieve Size** | **% Passing** |

| | |
|---|---|
| 2.00mm | 22 - 40 |
| 0.425mm | 10 - 25 |
| 0.075mm | 5 - 12 |

| | |
|---|---|
| Minimum C.B.R. @ 98% Mod. A.A.S.H.O. density | 80% |
| Maximum C.B.R. Swell | 0, 5 % |
| Maximum Liquid Limit | 25 |
| Maximum Plasticity Index | 4 |
| Maximum Linear Shrinkage | 2 |
| Minimum Sand Equivalent Value | 30 |
| Maximum Flakiness Index | 35 |

The soundness of the aggregate shall be such that after 5 cycles using Magnesium Sulphate it shall not show a loss of more than 15% by weight. The maximum Aggregate Crushing Value should not exceed 30.

The moisture content used for field compaction shall not exceed the Mod. A.A.S.H.O. optimum plus 2 %.

**Natural Ground Base Course**

Natural ground base course shall be approved stone which meets either of the following specifications.

Natural Gravel (Unstabilised)

| | |
|---|---|
| Minimum C.B.R. at 98% Mod. A.A.S.H.O. | 80 % |
| Minimum C.B.R. Swell | 0.5 % |
| Group Index value | 0 |
| Maximum Plasticity Index | 4 |
| Maximum Liquid Limit | 35 |
| Maximum Linear Shrinkage | 2 |
| Minimum Sand Equivalent Value | 30 |
| Maximum size of particle | 5 |
| Material passing No. 75 micrometer sieve shall not exceed 25 % | 3 m m |

The combined coarse sand and coarse/fine sand fraction shall not exceed 35 % of the soil mortar

**Natural Gravel (Stabilised with Lime)**

Lime must comply with SANS Specification 824 Minimum C. B .R.

| | | | |
|---|---|---|---|
| at 98% Mod. A.A.S.H.O. density, | 160 | 140 | 120 |
| provided that the minimum C.B.R. before stabilising, | | | |
| 95 % Mod. A.A.S.H.O. density | 30 | 45 | 60 |
| Maximum C.B.R. S well | | | 0, |
| Maximum Plasticity Index | 4 | | |
| Maximum particle size | 2/3 layer thickness Maximum percentage | | |
| passing No. 75 micrometer sieve | 25 | | |
| Grading Modules | 1, 5 | | |

The responsibility for obtaining suitable base course material complying with the above rests with the Contractor, unless otherwise specified, and the provisions for sub-base material in regard to tests, etc. to prove compliance with the specification shall apply to the base course.

During construction, the base course shall be evenly distributed over the sub-grade. The stone shall then be rolled with a 4 to 5 tonne roller or equal unless otherwise instructed. After a few passes of the roller the surface shall be checked for shape camber and levels and all depressions filled in. Rolling and trimming shall continue until the surface is true to required levels and falls.

Minimum density in place after compaction shall be 98% Mod. A.A.S.H.O. density.

**CHIP AND SPRAY SURFACING**

**Binders**

One of the following may be used: —

M.C. 3000 Bitumen to SANS Specification 308 (150/200 Pen.)

M.C. 800 Bitumen to SANS Specification 308 (150/200 Pen.)

RTH 45 / 50 Tar to SANS Specification 748 Spray-grade 60% emulsion where approved or specified by the Department. If emulsion is used then the specified application rates shall be increased to give the required net bitumen content.

**Cover Aggregate**

All Cover aggregate used in the surface treatment shall be washed 13.2mm nominal sized crusher stone in accordance with SANS Specification 647.

Aggregate Crushing Value shall not exceed 15.

Binder shall be applied after the prime coat has dried completely and all tackiness has vanished. The binder is to be applied by means of a distributor at a rate of 1.1 litre/m2 followed immediately afterwards by the spreading of a cover aggregate of 13.2mm stone at the rate of 125$m^2$ / $m^3$. The aggregate is to be spread by means of an approved chip spreader; band spreading will only be permitted in those areas inaccessible to the spreader. The aggregate is to be rolled immediately with two passes of a pneumatic tyred roller. When the binder has set the surface shall be drag-broomed twice in each direction and then rolled again with four passes of the roller during the heat of the day or until the aggregate is firmly keyed into a tight surface.

**DOUBLE SEAL COAT WITH BLACK TOP SURFACING**: — The prime and first seal coat shall be applied as previously specified.

After the first seal coat has been drag-broomed and rolled as previously described, the binder shall be applied to the surface at a rate of 0.8 litre/in 2 followed immediately by the spreading of 6.7mm stone chips at the rate of 150$m^2$/$m^3$. This stone aggregate shall then be drag-broomed and rolled as previously described.

A seal spray having a net bitumen content of 0.7 litre/$in^2$ shall then be applied to the surface when this coat has dried completely, and shall be rolled to firmly bed any loose aggregate.

If the surface is to be opened early to traffic, it shall be covered very lightly with sand or crusher dust distributed evenly with a hessian drag and back rolled with wet wheels before opening to traffic.

**SLURRY SEAL SURFACING**: — The aggregate for slurry seal shall conform to the following grading: —

| Sieve Size (mm) | Percentage Passing 4, 75 | 100 |
|---|---|---|
| 2, 36 | 90—100 | |
| 1, 18 | 65—95 | |
| 0, 600 | 42—72 | |
| 0, 300 | 23—48 | |
| 0,150 | 10—27 | |
| 0, 075 | 5—12 | |

Slurry sand shall be crusher sand with a minimum sand equivalent of 35. Binder — Stable grade emulsion (60%)

Anionic to SANS Specification 309

Cationic to SANS Specification 548

Consistency of the slurry shall consist of 90% crusher sand, cement filler not less than 1% and net binder content of not less than 9% by weight. Water to be added as required. As a guide, approximately 300 litres of emulsion and 160 litres of water are required per cubic metre of slurry.

The slurry shall be machine mixed and wherever possible applied by means of a spreader box. The rate of application shall be $170m^2/m^3$. The slurry shall be of a creamy, homogeneous mixture, free of lumps, and if the mixture shows signs of breaking before application to the surface it shall be discarded.
After the first seal has been approved by the Department, but before the application of the slurry, a fog spray comprising of a solution of 1 part emulsion to 3 parts water shall be applied at a rate of 0.8 litre/$m^2$ to cover the aggregate. The application of the slurry may commence when the fog spray has been applied to assist with the spread of the slurry and to smooth out squeegee marks the slurry shall, immediately after being applied and before it has broken, be smoothed by a damp hessian drag either attached to the spreader box or pulled over by hand.
After the slurry has set it shall be covered by two passes of a pneumatic-tyred roller during the heat of the day.
The permissible variation in the application of the slurry shall not vary from the specified rate by more than 10%.

**PREMIX TARMACADAM SURFACING**

**Prime Coat**

When the base course is complete and dry it shall be cleaned of all loose material and be given a prime coat of one of the following primers: —
M.C. cut-back bitumen.
Tar Primer R.T.H. 3/P.
Emulsion Primer (60%).
The rate of application of the primer shall be within the range 0.65—1.0 litre/$m^2$, the actual rate to be determined by test and observation on site. Where emulsion primer is used, the application rate shall be increased to give the required nett bitumen content.
Hand spraying shall be used only in those areas inaccessible to mechanical distributors. Before spraying is commenced, the surface shall be lightly watered to settle dust.

**Single Coat Premix Tarmacadam**

When the prime coat has dried the single coat premix wearing course, of the compacted thickness specified, shall be constructed.
The wearing course shall be Type A (Hot Mix), unless otherwise specified or approved by the Department, and shall conform to the following specification: —

**TABLE G: SINGLE COAT PRE-MIX WEARING COURSE: SPECIFICATIONS**

| | **Screen Size mm** | **A Hot Mix** | **B Hot Mix** | **C (Kerbs)** |
|---|---|---|---|---|
| Aggregate Grading Per Cent Passing | 26.5 | 100 | - | - |
| | 19.0 | 100 | - 100 | - |
| | 13.2 | 80 - 100 | 80 - 95 | - 100 |
| | 9.5 | 70 - 90 | 60 - 75 | 90 - 100 |
| | 6.7 | - | 45 - 60 | |
| | 4.75 | 50 - 70 | 28 - 42 | 65 - 75 |
| | 2.36 | 35 - 50 | 18 - 30 | 52 - 62 |
| | 1.18 | 27 - 40 | 7 - 20 | 50 - 60 |
| | 0.6 | 19 - 30 | 2 - 10 | 45 - 55 |
| | 0.3 | 13 - 23 | 0 - 5 | 30 - 40 |
| | 0.15 | 8 - 16 | 0 - 4 | 9 - 19 |
| | 0.075 | 4 - 10 | | 4 - 8 |
| Grade Binder | | 60 / 70 | Emulsion | 60 / 70 |
| Nominal Nett Binder Content | | 5.5 % +/- 0.38 | 4.75 % +/- 0.3 | 5.5 % +/- 0.3 |

Penetration grades to comply with SANS Specification 307.

Cut-back bitumen to comply with SANS Specification 308.
Maximum heating temperature of bitumen $170^0$C.

Delivery temperature at the paver for hot mixes 130—160ºC.
For every 500m$^2$ of area paved the Contractor shall produce an extraction test result from a sample taken during laying operations showing grading and bitumen content of the premix carpet. The test as specified or any further tests to prove compliance with the specification shall be at the Contractor's expense.

In order that the stone and binder shall be properly mixed, this operation must be carried out in a pug-mill mixer or by hand with shovels and wheelbarrows or on metal plates, in which case the binder must be added in the correct proportions in small quantities. Mixing shall continue until the aggregate is uniformly coated with the binder. Bituminous surfacing shall not be carried out in rainy weather nor when atmospheric shade temperature is below 10$^0$C. Immediately after mixing, the surfacing materials must be spread and rolled on the same day. Spreading shall be done evenly over the base to ensure a consolidated thickness as specified and shall be performed by means of a mechanical spreader or by a drag spreader, or by hand, using rakes and screeds.
Where hand spreading is used, the premix must not be dumped on the base, but taken from the boards on barrows by shovel and then evenly distributed over the base. Hand raking must be reduced to a minimum to avoid segregation of aggregate. Rolling shall commence as soon as the binder has set sufficiently and, unless otherwise instructed, this shall be done with a 4 to 5 tonne roller or equal.
Places inaccessible to a roller may be compacted by means of 12kg tampers. The surface shall be rolled true to line and level without slacks or irregularities.
After three days the rolling shall be repeated during the hottest part of the day and a light application of fines may be added during the final rolling.

**Premix Tarmacadam Kerb**

Premix kerbs are to be Type C as specified above and constructed to give the following compacted size: —

| | |
|---|---|
| Width at top | 125mm |
| Width at base | 230mm |
| Height | 150mm |

**PRE-CAST CONCRETE PAVING BLOCKS**: — shall be of the type, class and thickness specified, of approved colour and shall comply with SANS Specification 1058. Paving blocks which fail to meet these requirements must immediately be removed from the site and replaced at the Contractor's expense to the satisfaction of the Department.
Paving blocks shall be one of the following types as specified: —
Type S-A: — allows geometrical interlock between all vertical faces of adjacent blocks, Type S-B: — allows geometrical interlock between some vertical faces of adjacent blocks. Type S-C: — allows no geometrical interlock between vertical faces at adjacent blocks.
Paving blocks shall be one of the following classes as specified: — Class 25: — average compression strength of at least 25 MPa.
Class 35: — average compression strength of at least 35 MPa.
Paving blocks are to be laid to approved patterns as specified and in accordance with the relevant clauses (excluding Clause 8) of SANS Specification 1200 MJ on and including a sand bed of the compacted thickness specified. After laying, the paving blocks are to be compacted by means of a vibrating plate compactor with the joints filled in, after compaction, by sweeping in jointing sand.
Sand for bedding shall conform to the following grading: —

| Sieve size (mm) | Percentage Passing |
|---|---|
| 9, 52 | 100 |
| 4, 75 | 95-100 |
| 2, 36 | 80-100 |
| 1, 18 | 50-85 |
| 0, 60 | 25-60 |
| 0, 30 | 10-30 |
| 0, 15 | 5-15 |
| 0,075 | 0-10 |

Sand for jointing shall pass a 1.18mm sieve and shall contain 10-50% of material that passes a 0,075mm sieve.
Spaces constituting less than 25% of a full block unit and of 25mm minimum dimension at perimeter edges of pavings against kerbs, buildings, inspection chambers, etc. are to be filled with Class B concrete trowelled to a smooth even surface to match paving blocks.

Rates for paving block pavings are to include for all straight cutting and waste, all half blocks at straight edges, filling with concrete as described, fitting, protecting from injury and cleaning down at completion.

**KERBS**

**Generally**

The kerbs are to be laid before the base course is commenced to the lines and positions as shown on the drawings. The Contractor is to allow sufficient time for the mortar bedding and joints to set and is to take all necessary precautions to maintain the line of the kerbs especially while rolling the base course and surfacing, as no claims in this connection will be considered.

Rates for kerbs are to include for necessary excavation, well consolidated bottom under kerbs and for filling and ramming to secure the kerbs in position.

**Pre-cast Concrete Kerbs**

Pre-cast concrete mountable kerbs as SANS Fig8 are to be of concrete Class 20 (20 MPa) and of the sizes described in the items, cast generally in 1m lengths, and finished smooth off the mould on top edge and both sides, with angles rounded, and rates are to include for all necessary formwork and moulds. The kerbs are to be bedded on and including a mat of 1:3 cement mortar, and the abutting ends of the kerbs are to be fully jointed in a similar mortar and pointed with a keyed-in joint on top edge and exposed sides.

**Brick on edge kerbs**

Brick on edge kerbs are to be of extra hard burnt bricks of the colour specified. The kerbs are to project 10mm above the finished tarmacadam level and are to be bedded on a mat of 1:4 cement mortar, and the abutting ends of bricks are to be fully jointed in a similar mortar and pointed with a keyed-in joint on top and exposed sides.

## 19. FENCING AND GATES

**GENERALLY***:* — The Department shall be responsible for the initial location and exposure of all necessary boundary beacons and their indication to the Contractor at the site handover. The Contractor shall be responsible for subsequently ensuring that these beacons remain undisturbed and that the fencing is correctly aligned between boundary beacons. Should, during setting out of the further boundary beacons be uncovered or located and reasonable doubt arise regarding the correct alignment of fencing, then the Contractor shall be responsible for immediately notifying the Department, in writing, of such doubt, in order that the setting out may be checked and rectified, if necessary.

All bushes, trees, old fencing, rocks, debris, long grass and other obstructions shall be removed from the fencing line to produce a clear even strip 500mm wide on either side.

Trees, rocks or other items of horticultural or archaeological interest that are not to be removed will be indicated by the Department.

**Straining Posts**: - shall be erected at ends, corners and intermediately at not exceeding 30m centres with standards or intermediate posts erected between posts at not exceeding 3m centres.

Where fences are erected directly over boundaries, corner beacons shall be preserved by splaying the corner by planting two straining posts, each with one stay, 1 m from the beacon peg.

Security fences (i.e. fences with projecting overhangs if specified) shall be sited 350 mm back from the boundary line so that the end of the overhang is exactly on the boundary line.

**SECURITY FENCING:**

2.3m High security fencing shall consist of: -

1) Straining and Intermediate Posts (2.9mtr long).
2) Stays (2.6mtr long).
3) Welded mesh fencing (1.8mtr high).
4) Razor wire.
5) Concrete ground beam.
6) Tubular steel gate posts (when specified).

Straining and corner posts shall be 150mm ø x 3mm wall thickness steel tubing, in lengths as specified, with upper end capped and 3mm thick x 300mm x 300mm footplate welded to base. The whole shall be **hot dipped galvanized**. 80mm diameter stays x 3mm wall thickness shall be secured to posts with galvanised bolts. Straining posts to be positioned at maximum 30mtr c/c. Bottom of posts bedded in concrete to be painted with bitumen paint prior to erection. Where holes have to be drilled on site, drilling shall be cold galvanized before corrosion sets in.

Intermediate posts shall be 2.9mtr long x 100mm x 100mm square pre-stressed, precast concrete posts with top end splayed, spaced at maximum 3mtr apart. Stays for posts shall be prestressed reinforced concrete members of 75mm x 75mm x 2.6mtr long, splayed at the top end, with a 10mm ø x 50mm long galvanized steel pin attached to fit into a drilled hole in the upright and bonded to posts with approved epoxy.

Fence shall comprise of galvanized rectangular welded mesh fencing 1,80mtr high x 3.15mm ø x 25mm x 50mm rectangles fixed to 8 gauge or 3.15mm diameter – as

specified - hardened galvanized steel straining wires x 5, spaced vertically at 450mm ¢. Welded mesh shall be secured to straining wires with 2mm ø galvanized tying wire spaced at a maximum of 250mm between ties. Fencing overlap to be a minimum of 150mm.
Straining wires shall be fixed to posts with doubled strands of 2mm ø galvanized tying wire, pulled tight around posts and wound tightly around the straining wires.
Coils of 500mm ø galvanized flat wrap razor wire shall be fixed vertically above the welded mesh to a height of 450mm above the top of the welded mesh. Razor wire shall be supported on and fixed to three strands of galvanized double strand barbed wire. Barbed wire shall be fixed to the posts in the same manner as the straining wires.
Razor wire shall be fixed to the barbed wire at every intersection and laced to the concrete posts with galvanized tying wire.
A 250mm wide x 150mm minimum depth concrete ground beam of 15mpa strength shall be excavated for and cast along the entire length of the fence. Shuttering for the ground beam sides shall be provided as required.
Finished level of the ground beam shall be 50mm above final ground level at the highest point, finished in a straight line both vertically and horizontally. 75mm of the welded mesh fencing and the bottom straining wire shall be embedded in this ground beam to secure the lower fence line. The top of the concrete beam shall be shaped to allow water to run off the top of the beam to prevent water collecting and standing on top of the beam.
At any change in direction of the fence line, two 150mm ø x 3mm wall thickness straining posts shall be erected with bottom ends embedded in a common concrete base with each post stayed separately.
Concrete bases for posts shall be Class B (1:3:5-19mm stone) size 400 x 400 x 500mm deep, unless otherwise specified, with tops of bases 100mm below ground level.
When required, gateposts shall be supplied in steel tubing complying with CKS 82, 150mm ø x 5mm wall thickness, in lengths as specified, with upper end capped with 1.6mm thick pressed mild steel domed cap welded on and 3mm thick x 300mm x 300mm footplate welded to base. Gateposts are to be drilled and fitted with mild steel ferrules welded into position to receive 20 mm ø mild steel hinges. Threaded 12 mm ø studs or approved stay collars are to be fixed on to the posts to locate and secure the top ends of stays. The whole shall be hot dipped galvanized. Where holes for the threading and fixing of straining wires are required, holes shall be drilled on site and cold galvanized on completion.
Stays shall have the top end flattened, bent as required, holed 12 mm ø for bolting to post and the whole hot dip galvanized.
Mild steel tubing for gate components shall comply with SANS Specification 657 Part 1. The diameters specified are the nominal external diameter of the tubing.
**Straining wire**: - shall be as specified, or either Type 1 galvanized wire of 3,15 mm diameter or Type 2 PVC coated galvanised wire with 3, 15 mm diameter core wire PVC coated to an overall diameter of 3,95 mm. Stainless steel straining wire when specified shall be 2,50 mm diameter A.I.S.I. Type 304 stainless steel, strained between posts and tied to same at terminal ends by turning each wire twice around the post and tying off by twisting it a minimum of three turns around the strained wire.
**Binding or Tying wire**: - shall be as specified, either Type 1 galvanised wire of 2 mm diameter or Type 2 PVC coated galvanised wire with 2 mm diameter core wire PVC coated to an overall diameter of 2, 80 mm.
**Galvanized barbed fencing wire**: - shall consist of two strands of 1, 60 mm diameter high tensile steel wire twisted together with barbs at 125 mm centres and each row of barbed wire shall be strained between posts and tied to same at ends by turning each wire around the post and tying off by twisting it a minimum of three turns around the strained wire.
**Galvanising**: - shall comply with SANS Specification 763 and all items of posts, stays, gate

framing, etc., described as galvanised shall be hot dipped galvanised after fabrication with Class A galvanising with all internal and external surfaces fully coated.

**GATES:** — Generally single gates and double gates shall be of the sizes stated and formed with mild steel tubular framing all round, covered with chain link wire mesh of the type specified laced to framing. Tubular framing to gates shall be mitred and welded at corners and, at all other intersections, the tubular framing shall be scribed and welded together with all welds ground smooth.

**Preferred gate hinges are Bullet Type or through pin type hinges.**

Where gates are to be hung on precast concrete posts, hinges shall be fixed to and including mild steel clamps, each formed of two 50 x 5 mm mild steel plates 200 mm long, twice holed for and bolted on opposite sides of post with two 10 mm ø x 140 mm galvanized mild steel hex-head bolts and with each plate holed to receive 20 mm ø gate hinge.

Each single gate and one leaf of each double gate shall be fitted with gate latch formed of 25 x 6 mm mild steel bracket, 550 mm girth, twice bent to U-shape with centre section 150 mm high and with ends scribed and welded to tubular stile of gate. A locking bar formed of 25 x 6 mm mild steel plate, 100 mm long, twice holed 13 mm diameter for shackle of padlock and for pad bolt, shall be welded to inside of bracket. The sliding pad bolt shall be formed of 12 mm ø mild steel rod, 220 mm long, with 25 x 6 mm mild steel flat bar 60 mm long welded on at one end and holed 13 mm diameter for shackle of padlock. The stile of the gate and the locking post or locking stile of the double gate shall be holed for and fitted with mild steel ferrule welded in to receive pad bolt. In addition, fittings to each leaf of double gate shall comprise 50 x 6 mm mild steel locking bar, 80 mm long, holed 20 mm ø for shackle of padlock and welded to locking stile of gate and drop bolt formed of 16 mm diameter mild steel rod, 575 mm girth, once bent to L-shape, fitted through and including 20 mm internal diameter mild steel sleeve welded to gate at bottom corner, with 12 mm diameter mild steel peg stay 25 mm long welded on to gate frame.

A concrete gate stop block size 230 x 230 x 230 mm deep with two 20 mm internal diameter mild steel sockets, each 75 mm long, cast into top shall be embedded in the road surface between each pair of double gates in the closed position. A similar gate stop block but with one socket shall be embedded in the road surface to each leaf of double gate in the open position.

Each single or double gate shall be fitted with an approved 51 mm brass padlock with hardened steel shackle and two keys.

**Gates for 1, 20 m high fencing**

Single gates shall be size 1,00 x 1,20 m high, each hung on hinges as stated above and formed of 32 mm diameter x 2 mm wall thickness mild steel tubular framing all round. Each gate shall be fitted with locking pad bolt with brass padlock.

Double gates shall be in two equal leaves with each leaf size 2.25 x 1, 20 m high, hung on hinges as stated above, formed of 38 mm diameter x 2 mm wall thickness mild steel tubular framing all round with two 38 mm diameter x 2 mm wall thickness mild steel tubular braces welded on between bottom corners and centre of top rail of each leaf. Each pair of double gates shall be fitted with locking pad-bolt, locking bars with brass padlock, drop bolts and concrete gate stop blocks as specified above.

**Gates for 1, 50 m high fencing**

Single gates shall be size 1, 00 x 1, 50 m high as described for gates for 1, 20 m high fencing but with each stile of gate extended 330 mm above top rail and braced between top rail and top of extension arm with 32 mm diameter x 2 mm wall thickness mild steel diagonal brace welded on and hung on hinges as stated above. Two rows of galvanised barbed wire, spaced 150 mm apart, shall be strained and tied to the extension arms.

Double gates shall be in two equal leaves with each leaf size 2, 25 x 1.50 m high with each hung on hinges as stated above, all as described for double gates for 1, 20 m high fencing but with each stile of each leaf extended 3 mm above top rail and braced between top rail and top of extension arm with 38 mm diameter x 2 mm wall thickness mild steel diagonal brace welded on. A vertical extension arm 330 mm high - formed of 38 mm diameter x 2 mm wall thickness mild steel tube - shall be welded on above centre of top rail. Two rows of galvanised barbed wire, spaced 150 mm apart, shall be strained and tied to extension arms.

**Gates for 3, 00 m high fencing**

Single gates shall be size 1,00 x 1,50 m high, hung on hinges as stated above and formed of 38 mm diameter x 2 mm wall thickness mild steel tubular framing all round with 38 mm diameter x 2 mm wall thickness mild steel horizontal centre rail. Each gate shall be fitted with locking pad bolt with brass padlock.

Chain link wire mesh fencing shall be carried over and above the top of the gate as previously described for fencing.

Double gates shall be in two equal leaves with each leaf size 2, 25.x 3, 00 m high, each hung each hung on hinges as stated above, and formed of 51 mm diameter x 2 mm wall thickness mild steel tubular framing all round with two 51 mm diameter x 2 mm wall thickness mild steel tubular braces welded on between bottom corners and centre of top rail of each leaf. Each pair of double gates shall be fitted with locking pad bolt, locking bars with brass padlock, drop bolts and gate stop blocks.

**Gates for 1, 8 m high security fencing:**

Single gates shall be size 1,00 x 1,80 m high, hung on hinges as stated above and formed of 38 mm diameter x 2 mm wall thickness mild steel tubular framing all round with 38 mm diameter x 2 mm wall thickness mild steel horizontal centre rail. Each gate shall be fitted with locking pad bolt with brass padlock.

Single gates shall be hung on mild steel tubular gate posts with cranked overhang when specified and the galvanised barbed wire overhang shall be carried over above the gate as previously described.

Double gates shall be in two equal leaves with each leaf size 2, 25 x 1, 80 m high, each hung on hinges as stated above and formed of 51 mm diameter x 2 mm wall thickness mild steel tubular framing all round with two 51 mm diameter x 2 mm wall thickness mild steel tubular braces welded on between bottom corners and centre of top rail of each leaf. The stiles of each gate shall be extended 450 mm high above the top rail and braced between top rail and top of extension arm with 51 mm diameter x 2 mm wall thickness mild steel diagonal brace welded on. A vertical extension arm 450 mm high formed of 51 mm diameter x 2 mm wall thickness mild steel tube shall be welded on above centre of top rail. Three rows of galvanised barbed wire, spaced 150 mm apart, shall be strained and tied to extension arm. Each pair of double gates shall be fitted with locking pad bolt, locking bars with brass padlock, drop bolts and gate stop blocks.

Double gates shall be hung on posts without cranked overhang but with the posts extended 450 mm high above top of chain link wire mesh fencing to receive continuation of barbed wire and razor wire.

**Gates for 2, 40 m high security fencing**

Single gates shall be of size 1, 00 x 2, 00 m high, all as described for gates for 1, 80 m high security fencing.

Chain link wire mesh fencing shall be carried over above the top of the gate to an overall height of 2, 40 m with the razor wire carried across between the gateposts.

Double sates shall be in two equal leaves, with each leaf 2, 25 x 2, 40 m high, all as described for double gates in 1, 80 m high security fencing.

Double gates shall be hung on posts without cranked overhang but with the posts extended 450 mm high above top of chain link wire mesh fencing to receive continuation of razor wire.

**SUBMISSIONS FOR PREFABRICATED TIMBER ROOF TRUSSES**

**Letter Ref. TR 1**

I / We hereby undertake to be responsible for the design of the total timber roof construction and will satisfy myself / ourselves that the fabrication and erection is in accordance with my / our design.

Project: _____

_____

Part(s):

_____

_____

NAME _____ OF _____ FIRM:

SIGNATURE: _____ QUALIFICATION:

_____

DATE: _____

**Letter Ref. TR 2**

I / We am/are satisfied that the fabrication and erection of the total roof construction has been completed in conformity with my / our design.

Project: _____

_____

Part(s):

_____

_____

NAME OF FIRM:

SIGNATURE: _____ QUALIFICATION:

_____

DATE: _____

**SUPPLEMENTARY PREAMBLES**

The following Supplementary Preambles are to be read in conjunction with the "Standard Preambles to all Trades" included here before and are to apply to this Contract.

Where these "Supplementary Preambles" are at variance with the "Standard Preambles to all Trades" referred to above, such variances are to take precedence and are to apply to this Contract.

**1. <u>ALTERATIONS</u>**

All Notes, Preambles, etc. applicable for the various trades in the Bills of Quantities, will apply equally to the trades in this Bill.

Tenderers are advised to visit the site and satisfy themselves as to the nature and extent of the work to be done, and also to examine the condition of the existing building.

Tenderers are advised that all materials from the pulling down (except where described to be re-used or handed over to the Department) will become the property of the Contractor, and all these materials, together with all rubbish and debris, must be immediately carted away, and the site left clean and unencumbered.

Materials, etc. which are described to be handed over to the Department are to be carefully dismantled where necessary, and neatly stacked where directed on site. Items described as removed shall be removed from site.

Credit for the value of the materials from the pulling down may be allowed for on the Final Summary page.

Prior to the removal of any timbers from the site, they are to be inspected by the Government Entomologist as laid down in Section 32 of the Government Forest and Veld Conservation Act of 1941 (Act 13 of 1941) as amended. If any of the timbers are infested with wood destroying agencies, they are to be disposed of in the manner prescribed by the Government Entomologist.

The Contractor is to give ample notice to the Department and Local Authorities regarding any disconnections necessary prior to the removal or interruption of electric light or telephone cables, water and sanitary services, etc.

Tenderers are advised that adjacent sections of this building will be occupied during the building operations, and the Contractor is required to carry out the work with as little noise, dust and disturbance as possible. Undisturbed access is to be given to patients, staff and visitors.

The Contractor is advised to check all dimensions affecting the existing building as he will be held solely responsible for all new work being of the correct size. All sizes stated are approximate and under no circumstances will claims be entertained should actual sizes of existing items on site vary marginally from the sizes stated in this document.

The Contractor will be held solely responsible for any damage to persons, property, and equipment and for the safety of the structure throughout the whole of the Contract, and must make good at his own expense any damage that may occur.

The Contractor must obey the instructions of the Department in carrying out any portion of the work which in his opinion requires expediting, and the Contractor shall give priority to such work as and when directed.

In taking down and removing existing work, the utmost care is to be observed to avoid any structural or other damage to the remaining portions of the building. The Contractor must also protect all work not removed, such as walls, floors, doors, windows or joinery, loose and fixed fittings and electrical equipment, appliances, etc. from damage during the progress on the works and provide all necessary materials in so doing.

Special care is to be taken not to interfere with any electric light, bell, power or telephone wires and fittings that may be encountered on site. New work to the existing electrical, air- conditioning, gas and telephone installations, etc. is included elsewhere in this document.
The Contractor must take the exigencies of the Hospital Service into consideration. Liaison is to be carried out through the offices of the Regional Engineer, with referrals to the Director: Physical Facilities Management for a final decision. No instructions may be received by the Contractor from the Hospital Authorities and all instructions are to be given by the Chief Department in writing before they are put in hand.

**2. CONCRETE, FORM WORK AND REINFORCEMENT**

Cement is to comply with:
SANS ENV 197 (1 to 2)
SANS ENV 413 (1 to 2)
SANS ENV 196 (1 to 7)
SANS ENV 196 (21)
as applicable, and replaces the following SANS Specifications in the Standard Preambles:
SANS 471 Portland cement (ordinary, rapid hardening and sulphate resisting)
SANS 626 Portland blast furnace cement.
SANS 831 Portland cement 15 (ordinary and rapid hardening)

**3. MASONRY**

Masonry is to comply with SANS Code of Practice 0249 and 0164 as applicable.

**4. ROOF COVERINGS, ETC.**

The installation of roof coverings and side claddings is to comply with SANS Code of Practice 0237 as applicable.

**5. CARPENTRY AND JOINERY**

Note:
All timber must be treated in terms of SANS Code of Practice 05 for GYMNOSPERMAE including all SA Pine species and ANGIOSPERMAE including all Eucalyptus species but excluding laminated timber.
It is now a compulsory requirement to use only treated timber in buildings. The treatment shall comply with SANS 457, 753, 754 or 1288 as relevant.
Reference must also be made to the appropriate Standard Preambles and SANS requirements for items not covered by these joinery preambles, etc. i.e. ironmongery, aluminium, glazing, paintwork, etc.
Where items are described as “plugged and screwed”, they are to include for plugging and screwing to new or existing brickwork or concrete, with heads of screws sunk and pelleted.
Sawn softwood timber: General, Stress Graded, Industrial, Brandering and Battens is to comply with SANS 1783 Parts 1 to 4 as applicable.
All hardwood is to be dark red Meranti, even in grain and colour selected for “Standard and Better” quality, from Malaysia, with a minimum density of 550 kg per cubic metre at moisture content of 12%, and is to comply with SANS 1099 as applicable.
Hardboard is, unless otherwise described; to be 3mm un-tempered hardboard for floor units and 6mm tempered hardboard for wall units.

Melamine faced moisture resistant V313 chipboard can be used when specified.

Materials generally are to comply with the following specifications and requirements as applicable:

**TABLE H: CARPENTRY AND JOINERY: SANS SPECIFICATIONS**

| MATERIAL | SANS SPECIFICATION | GRADE OR CLASS |
|---|---|---|
| Softwood structural timber | 1783 | Parts 1, 2, 3, 4 |
| Softwood engineering timber | 1783 | Parts 1, 2, 3, 4 |
| Softwood studs for timber frames in building | 1783 | Parts 1, 2, 3, 4 |
| Softwood brandering and battens | 1783 | Parts 1, 2, 3, 4 |
| Softwood joinery timber | 1783 | Parts 1, 2, 3, 4 |
| Softwood flooring boards | 629 | Flooring Grade |
| Hardwood joinery timber | 1099 | Heavy flooring board |
| Hardwood strip flooring | 281 | Knotty grade |
| Wooden ceiling and panelling boards | 1039 | As specified |
| Laminated timber (glulam) | 1460 | As specified |
| Gypsum, plasterboard | 266 | As specified |
| Wood fibreboard | 540 | As specified |
| Wood wool panels (cement bonded) | 637 | As specified |
| Fibre cement sheets: profiled and flat | 685 | As specified |
| Fibre cement boards | 803 | As specified |
| Plywood and composite board<br>Particle Board:<br>Highly Moisture resistant exterior and flooring type<br>Interior Type | 929<br><br><br>EN 312<br>EN 312 | <br><br>Parts 1 to 7 |
| Decorative laminates | SANS ISO 4586 and SANS 1405 | High Pressure |
| Decorative Melamine Faced Boards | 1763 | |
| Wooden Doors (flush) | 545 | |
| Materials for thermal insulation of buildings | 1381 | As applicable |
| Mild steel nails | 820 | |
| Metal screws for wood | 1171 | |
| Creosote | 538 | As specified |
| Timber roof trusses | 0243 | SANS Code of Practice |

## 6. CEILINGS AND PARTITIONS

Refer to Joinery Fittings regarding specifications and requirements of materials.

## 7. IRONMONGERY

**Materials**

i) Locks are to comply with SANS 4 as applicable

ii) Door closers are to comply with SANS 1510 as applicable

iii) Symbolic safety signs are to comply with SANS 1186 as applicable All ironmongery, unless otherwise described, is fixed to timber.

Sheet steel furniture to comply with SANS 757 as applicable

## 8. METALWORK

Rates are to include for cutting to lengths, splay cut ends, shaping, holing, tapping, threading, forging, turning, fitting, assembling, welding, filing smooth, preparation, priming coats, hoisting, temporary bracing and fixing in position.
Towel rails are to be tubular Satin Chrome mild steel to diameters - minimum 19mm - and lengths as specified in matched Satin Chrome end pieces. End pieces to be either flat or bracket type - according to requirements, application and specification - plugged and screwed into walls with Chromed Brass screws. Electro-plating is to comply with SANS ISO 1456 as applicable.
Curtain tracks to be "Forwin" Hospital Curtain Tracks as "Kirton" (Pty) Ltd. - or other approved -, including 15 wheeled runners per metre, hangers, brackets, stopped ends, etc. Hangers are to be suspended from roof timbers or concrete slab over – **not off the ceiling grid**. Allowance is to be made for necessary bends and curving as per plan supplied.
Curtains to be provided as (Chintz fabric (#155CZ) woven with 100% polyester yarn)
**SHELVING FOR PHARMACIES: -** Shall be epoxy coated steel shelving, either fixed to epoxy coated wall bands or free standing units as specified.
**SHELVING FOR CSSD STERILE STORE: -** Shall be slatted grade 304 stainless steel wall bands or free standing units as specified.
**Aluminium Windows and Doors NOTE**:

Glazed aluminium alloy windows and sliding doors for external use are to comply with SANS 1651 as applicable.
All items must conform to and carry the Certification Seal of the AAAMSA and no items which are not so certified will be accepted on site.
The work is to be cleated and framed.
All visible surfaces are to have a 25 micron anodised finish as specified. Anodised coatings on aluminium are to comply with SANS 999 as applicable.
Rates are to include for setting up and building in as well as for isolation material between the aluminium surfaces and adjacent surfaces of a differing material.
All visible surfaces are to be covered with a temporary protective tape, later to be removed. Float glass for glazing is to comply with SANS CKS 55 and SANS 952 as applicable.
Safety and security glazing materials for buildings is to comply with SANS 1263(1) unless otherwise described. All panes are to be marked so as to be visible. Laminated safety glass is to carry a written five year guarantee.
Windows and doors are to be watertight.
Silicon pointing to windows and doors is covered elsewhere.

## 9. PLASTERING

Rates for new plaster, screeds, etc. to existing surfaces are to include for all preparatory work and forming a key.

Removal of paint and/or varnish as well as the roughening of the existing face brick surfaces both externally and internally to receive new plaster has been measured separately.
Plaster and screeds, etc. in patches is generally of an isolated nature and to existing surfaces. Portion of the work may be in narrow widths.
Where alterations are to be done to the existing structure, the new plaster, etc. has been measured to a point 300mm beyond the line of the alteration on the existing structure.

## 10. TILING

Ceramic Wall and Floor Tiles are to comply with SANS 1449 as applicable.

## 11. PLUMBING AND DRAINAGE

Water Supply and Drainage for Buildings is to comply with SANS Code of Practice 0252 as applicable.
Water Supply and Distribution System Components is to comply with SANS 1808 as applicable.
Electrical Water Heater:
Storage Heaters to comply with SANS 151.
Instantaneous Heaters to comply with SANS 1356 and IEC 335 (2-35).

**12. GLAZING**

Glass is to comply with SANS Specification 952.
Glass for glazing is to comply with SANS Specification CKS 55.
Safety and security materials are to comply with SANS Specification 1263 as specified. Laminated safety glass is to carry a written five year guarantee.

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PROVINCE OF KWAZULU-NATAL

# Annexure 6A

**Generator Preventative Maintenance Service Programme**
**Monthly Inspections and Annual Service**

**Part One: Monthly Inspections**

**Institution** _____

**Date** _____ **Time** _____

**Inspection carried out by:** **Name** _____ **Rank** _____

**Signature** _____

**Generator Location** _____

**Monthly Inspection** - ***To be carried out by the Institutions maintenance personnel***

| **Procedure to follow before starting generator.** | | | **Checked:** | | **Comments** |
|---|---|---|---|---|---|
| **Items** | | | **Yes** | **No** | |
| 1 | Check fan belt, condition and tension. | | | | |
| 2 | Check fan for any visible damage. | | | | |
| 3 | Check radiator hoses and clamps. | | | | |
| 4 | Check radiator for any visible damage. | | | | |
| 5 | Check all hoses for dust ingress. | | | | |
| 6 | Check that water jacket heater is functional. | | | | |
| 7 | Check all guards are in position and secure. | | | | |
| 8 | Check battery charger. | | | | |
| 9 | Check date of installation or replacement of battery. | | | | |
| 10 | Check battery condition: | Casing | | | |
| | | Leads | | | |
| | | Box | | | |
| | | Lugs | | | |
| | | Battery terminals | | | |
| | | Clean and tighten connections. | | | |

| | | | | | |
|---|---|---|---|---|---|
| 11 | Check oil level. | | | | |
| 12 | Check radiator coolant level. | | | | |
| 13 | Check day tank fuel level. | | | | |
| 14 | Draw sample of diesel fuel and check clarity of sample. | Clear | | | |
| | | Cloudy | | | |
| | | Dirty (dark in colour) | | | |
| 15 | Check air vents on alternator for any obstructions. | | | | |
| 16 | Check starter motor mountings for tightness. | | | | |
| 17 | Chech engine alternator mountings for tightness. | | | | |
| 18 | Check generator base and anti vibrations mounts for signs of deterioration. | | | | |
| 19 | Drain water trap. | | | | |
| 20 | | | | | |
| 21 | | | | | |
| **Procedure to follow after starting and running generator on NO LOAD for 5 minutes.** | | | | | |
| **Items** | | | | | |
| 22 | Check for any leaks - oil, fuel, coolant, exhaust gases. | | | | |
| 23 | Check alternator charge operation. | | | | |
| 24 | Log engine temperature guage reading. | $^0$C | | | |
| 25 | Log engine oil pressure reading. | bar | | | |
| 26 | Log generator running hours | Hours | | | |
| 27 | Log engine battery voltage | volts | | | |
| 28 | Check low radiator coolant level. | | | | |
| 29 | Check all hoses, pipes, fittings and clamps for damage or leaks. | | | | |
| 30 | Check exhaust manifold, silencer and pipes. | | | | |
| 31 | Shut down generator using the Emergency stop push button. | | | | |
| 32 | Shut down generator and check the following: | | | | |
| | Engine Oil Level | | | | |
| | Radiator Coolant Level | | | | |
| 33 | | | | | |
| **Procedure to follow after starting and running generator ON LOAD for 30 minutes.** | | | | | |
| **Items** | | | | | |
| 34 | Log electrical load on the generator | kVA | | | |
| 35 | Change over mechanism functional. | | | | |
| 36 | Check MDI meters for functionality. | | | | |
| 37 | Check Voltage selector for functionality. | | | | |
| 38 | Check Phase selector for functionality. | | | | |
| 39 | | | | | |

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

# Annexure 6B

**Generator Preventative Maintenance Service Programme**
**Monthly Inspections and Annual Service**

**Part Two: Annual Service including Diesel Fuel Remediation**

**Institution** _____

**Date** _____ **Time** _____

**Service carried out by:** **Name** _____ **Name of Company** _____

**Signature** _____ **Order Number** _____

**Generator Location** _____

**Annual Service** - ***To be carried out by an industry recognised generator service provider.***
***Proof of competency required.***

| Procedure to follow before starting generator. | | | | Checked: | | Comments |
|---|---|---|---|---|---|---|
| Items | | | | Yes | No | |
| 1 | Check fan belt, condition and tension. | | | | | |
| 2 | Check fan for any visible damage. | | | | | |
| 3 | Check radiator hoses and clamps. | | | | | |
| 4 | Check radiator for any visible damage. | | | | | |
| 5 | Check all hoses for dust ingress. | | | | | |
| 6 | Check that water jacket heater is functional. | | | | | |
| 7 | Check all guards are in position and secure. | | | | | |
| 8 | Check battery charger. | | | | | |
| 9 | Check date of installation or replacement of battery. | | | | | |
| 10 | Drain Radiator and refill with manufacturer's specified coolant. | | Make and type | | | |
| 11 | Supply and fit new water filters as per manufacture's specification. | | Make and type | | | |
| 12 | Drain engine oil and refill with manufacture's specified engine oil. | | Make and type | | | |
| 13 | Supply and fit new oil filters as per manufacture's specification. | | Make and type | | | |
| 14 | Supply and fit new fuel filters as per manufacture's specification. | | Make and type | | | |
| 15 | Supply and fit new air filters as per manufacture's specification. | | Make and type | | | |
| 16 | Check battery condition: (Maintenance Free type) | | Casing | | | |
| | | | Leads | | | |
| | | | Box | | | |
| | | | Lugs | | | |
| | | | Battery terminals | | | |
| | | | Clean and tighten connections. | | | |
| 17 | Check battery condition: (Maintained type) | Hydrometer | Casing | | | |
| | | Green: | Leads | | | |
| | | Black: | Box | | | |
| | | Yellow: | Lugs | | | |
| | | Red: | Battery terminals | | | |
| | | Volts: | Clean and tighten connections. | | | |
| | | Amps: | | | | |
| | | | | | | |
| 18 | Check oil level. | | | | | |
| 19 | Check radiator coolant level. | | | | | |
| 20 | Check day tank fuel level. | | | | | |
| 21 | Check air vents on alternator for any obstructions. | | | | | |
| 22 | Check starter motor mountings for tightness. | | | | | |
| 23 | Chech engine alternator mountings for tightness. | | | | | |
| 24 | Check generator base and anti vibrations mounts for signs of deterioration. | | | | | |
| 25 | Drain water trap. | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |

| Procedure to follow after starting and running generator on NO LOAD for 5 minutes. | | | Checked | | Comments |
|---|---|---|---|---|---|
| Items | | | Yes | No | |
| 28 | Check for any leaks - oil, fuel, coolant, exhaust gases. | | | | |
| 29 | Check alternator charge operation. | | | | |
| 30 | Log engine temperature guage reading. | $^0$C | | | |
| 31 | Log engine oil pressure reading. | bar | | | |
| 32 | Log generator running hours | Hours | | | |
| 33 | Log engine battery voltage | volts | | | |
| 34 | Check low radiator coolant level. | | | | |
| 35 | Check all hoses, pipes, fittings and clamps for damage or leaks. | | | | |
| 36 | Check exhaust manifold, silencer and pipes. | | | | |
| 37 | Shut down generator and check the following:<br>Engine Oil Level<br>Radiator Coolant Level | | | | |
| 38 | | | | | |

| Procedure to follow after starting and running generator ON LOAD for 30 minutes. | | | Checked | | Comments |
|---|---|---|---|---|---|
| Items | | | Yes | No | |
| 39 | Log electrical load on the generator | kVA | | | |
| 40 | Change over mechanism functional. | | | | |
| 41 | Check MDI meters for functionality. | | | | |
| 42 | Check Voltage selector for functionality. | | | | |
| 43 | Check Phase selector for functionality. | | | | |
| 44 | | | | | |

**Annual Service -** ***To be carried out by an industry recognised diesel fuel remediation service provider.***

***Proof of competency required.***

The Generator Service Provider shall engage the services of a recognised diesel fuel remediation sub-Contractor to carry out a full diesel fuel remediation programme on the generator "day tank" as well as the bulk diesel fuel tank as per the specification of the KZN Department of Health. Annexure A

| | | | Checked | | Comments |
|---|---|---|---|---|---|
| Items | | | Yes | No | |
| 45 | Diesel Fuel Remediation in accordance with specification of the KZN Department of Health | | | | |
| 46 | Pressure testing of Bulk diesel fuels tanks in accordance with statutory requirements. | | | | |
| 47 | Disposal of contaminated diesel fuel. | | | | |
| 48 | Supply documented proof of the following: | Diesel Fuel Remediation Laboratory Results | | | |
| | | Diesel Fuel Tank Pressure Test Results | | | |
| | | Contaminated Diesel Fuel Disposal Certificate | | | |

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

# ANNEXURE 7

## GENERATOR PRE - DELIVERY INSPECTION AND TEST SHEET (Rev 3.2 Oct 2020)

***Copies hereof to be included in the Generator Manuals***

**DATE:** _____ **ORDER NO.:** _____

**SITE:** _____ **GENERATOR SIZE:** _____ **KVA**

**TYPE OF INSTALLATION:** _____

**Generator set data:**

**Engine.**
Engine Manufacturer: _____ **Engine Rating** _____ **kVA**
Engine Model No.: _____
Engine Type: _____
Engine Serial No.: _____

**Alternator.**
Alternator Manufacturer: _____ **Alternator Rating** _____ **kVA**
Alternator Model No.: _____
Alternator Serial No.: _____

**Control Panel.**
Control Panel Manufacturer: _____

**Checklist.**

**CANOPY.**

| | | CHECK | OK |
|---|---|---|---|
| 1 | PAINT | | |
| 2 | CONSTRUCTION | | |
| 3 | VERMIN PROOF | | |
| 4 | WEATHER PROOF | | |
| 5 | SOUND PROOF | | |
| 6 | dB SOUND LEVEL @ 7m MEASURED OUTDOORS | | |
| 7 | DOORS | | |
| 8 | HINGES, LOCKING BARS | | |
| 9 | RUBBER SEALS | | |
| 10 | CANOPY DC LIGHT & SWITCH | | |

**ENGINE / ALTERNATOR / BASE FRAME.**

| | | CHECK | OK |
|---|---|---|---|
| 11 | BASEFRAME CONSTRUCTION | | |
| 12 | ANTI VIBRATION MOUNTS | | |
| 13 | PAINT | | |
| 14 | RADIATOR | | |
| 15 | COOLANT FILLED | | |
| 16 | COOLANT LEVEL INDICATOR | | |
| 17 | OIL FILTER | | |
| 18 | AIR FILTER | | |
| 19 | FUEL FILTER | | |
| 20 | FUEL / WATER SEPERATOR | | |
| 21 | JACKET HEATER | | |
| 22 | BALL VALVES TO JACKET HEATER | | |
| 23 | EXHAUST SYSTEM | | |
| 24 | BALL VALVE TO ENGINE SUMP | | |
| 25 | FUEL SHUT DOWN VALVE | | |
| 26 | FUSIBLE FIRE LINK (IF APPLICABLE) | | |
| 27 | HOSES | | |
| 28 | DRIP TRAY (INDOOR TYPE) | | |
| 29 | DRIP TRAY DRAIN (INDOOR TYPE) | | |
| 30 | DC ALTERNATOR | | |
| 31 | OIL FILLED | | |
| 32 | WIRING AND TERMINATIONS INCLUDING EARTHING | | |
| 33 | TRANSFER PUMP WITH NON-RETURN VALVE, METAL PIPE AND HOSE | | |
| 34 | MOVING PARTS PROTECTION | | |

| | | CHECK | OK |
|---|---|---|---|
| 35 | STARTER BATTERY ENCLOSURE | | |
| 36 | STARTER BATTERY DATE STAMPED | | |
| 37 | FUEL TANK PAINTED | | |
| 38 | FUEL LEVEL INDICATORS (ANOLOGUE & ELCTRONIC) | | |
| 39 | ALTERNATOR WINDING CLASS (H) | | |
| 40 | ENGINE / ALTERNATOR RATING LABEL | | |

**GENERAL**

| | | | |
|---|---|---|---|
| 46 | MANUALS | | |
| 47 | TOOL BOX | | |
| 48 | PANEL KEY | | |
| 49 | LABELING (SEE BELOW) | | |
| 50 | WIRING DIAGRAM FRAMED & DISPLAYED | | |

**CONTROL PANEL**

| | | | |
|---|---|---|---|
| 51 | PAINT | | |
| 52 | EARTHING ON ALL DOORS | | |
| 53 | 4 POLE SWITCHING | | |
| 54 | CONTROLLER | | |
| 55 | SELECTOR SWITCH (CONTROLLER) | | |
| 56 | VOLTMETER (AC 500 VOLTS) 7 POSITION | | |
| 57 | MAXIMUM DEMAND INDICATORS X 3 | | |
| 58 | FREQUENCY METER | | |
| 59 | HOUR METER | | |
| 60 | COOLANT TEMPERATURE READING | | CONTROLLER |
| 61 | OIL PRESSURE READING | | CONTROLLER |
| 62 | CHARGING CURRENT METER (DC) | | |
| 63 | CONTACTORS / CHANGE-OVER CB | | |
| 64 | WIRING | | |
| 65 | DC LIGHT | | |
| 66 | BATTERY CHARGER SET TO 60% | | |
| 67 | PANEL LIGHTS | | |
| 68 | EMERGENCY STOP BUTTON | | |
| 69 | PERMANTLY FIXED WING PUMP INSTALLED COMPLETE WITH 5m OF HOSE FITTED WITH A FUEL STRAINER | | |
| 70 | TANK BREATHER INSTALLED | | |
| 71 | SELF BUNDED BASE TANK (YES / NO) OUTDOOR TYPE | | |
| 72 | LAMINATED SCHEMATIC DIGRAM AFIXED TO PANEL DOOR | | |
| 73 | ENGRAVED LABEL AS INDICATED BELOW | | |

**GENERATOR AMF CONTROLLER**

MAKE _____
TYPE _____
SERIAL NUMBER _____
WEBNET DSE 890 Serial No. _____
GATEWAY USB ID No. _____
DATA SIM CARD CELL No. _____
SIM CARD SERVICE PROVIDER: VODACOM / MTN
**CIRCLE APPROPRIATE SERVICE PROVIDER**

**LABELING REQUIRED (ALL ENGRAVED OR SCREEN PRINTED LABELS ONLY - NO STICK ON LABELS PERMITTED)**

SIGNS X 3 INDICATING GENERATOR MAY START WITHOUT WARNING (EXTERNAL)
SIGNS X 3 INDICATING UNAUTHORISED ENTRY PROHIBITED ( EXTERNAL)

| | |
|---|---|
| TANK CAPACITY | litres |
| LITRES/HOUR USAGE AT FULL LOAD | litres/hr |
| MAIN MCCB | |
| ALTERNATOR MCCB | |
| PHASE ROTATION LABEL | CLOCKWISE OR ANTI-CLOCKWISE |

**GENERATOR CONTROLLER PARARMETERS**

| | YES /NO | COMMENTS |
|---|---|---|
| STARTUP TIME DELAY: 5 SECONDS | | |
| RUN UP TIME / CHANGE OVER DELAY: 5 SECONDS | | |
| ON LOAD DELAY: 10 SECONDS | | |
| MAINS POWER RETURN DELAY: 60 SECONDS | | |
| COOLING DOWN TIME: 120 SECONDS | | |
| FUEL PUMP TO START AT 25% OF DAY TANK CAPACITY | | |
| FUEL PUMP TO STOP AT 90% OF DAY TANK CAPACITY | | |

***NOTE: ALL READINGS TO BE TAKEN AT 50% OF TIME LAPSED.***

| | | | | |
|---|---|---|---|---|
| **On - load test.** | **25 % of load** | | Amps | at unity (1.0 pf) |
| | | | Amps | at 0.8 pf |
| Time required to run | | minutes | ***Minimum 15 minutes*** | |
| Oil pressure | | BAR | | |
| Battery charging volts | | Volts | | |
| Frequency | | Hz | | |
| Water temperature | | °C | | |
| Generator Voltage: | | Volts - Red Phase | | |
| | | Volts - White Phase | | |
| | | Volts - Blue Phase | | |
| Generator Amperage: | | Amps - Red Phase | | |
| | | Amps - White Phase | | |
| | | Amps - Blue Phase | | |
| Generator speed | | RPM | | |

| | | | | |
|---|---|---|---|---|
| **On - load test.** | **50 % of load** | | Amps | at unity (1.0 pf) |
| | | | Amps | at 0.8 pf |
| Time required to run | | minutes | ***Minimum 15 minutes*** | |
| Oil pressure | | BAR | | |
| Battery charging volts | | Volts | | |
| Frequency | | Hz | | |
| Water temperature | | °C | | |
| Generator Voltage: | | Volts - Red Phase | | |
| | | Volts - White Phase | | |
| | | Volts - Blue Phase | | |
| Generator Amperage: | | Amps - Red Phase | | |
| | | Amps - White Phase | | |
| | | Amps - Blue Phase | | |
| Generator speed | | RPM | | |

| | | | | |
|---|---|---|---|---|
| **On - load test.** | **75 % of load** | | Amps | at unity (1.0 pf) |
| | | | Amps | at 0.8 pf |
| Time required to run | | minutes | ***Minimum 15 minutes*** | |
| Oil pressure | | BAR | | |
| Battery charging volts | | Volts | | |
| Frequency | | Hz | | |
| Water temperature | | °C | | |
| Generator Voltage: | | Volts - Red Phase | | |
| | | Volts - White Phase | | |
| | | Volts - Blue Phase | | |
| Generator Amperage: | | Amps - Red Phase | | |
| | | Amps - White Phase | | |
| | | Amps - Blue Phase | | |
| Generator speed | | RPM | | |

| | | | | |
|---|---|---|---|---|
| **On - load test.** | **100 % of load** | | Amps | at unity (1.0 pf) |
| | | | Amps | at 0.8 pf |
| Time required to run | | minutes | ***Minimum 15 minutes*** | |
| Oil pressure | | BAR | | |
| Battery charging volts | | Volts | | |
| Frequency | | Hz | | |
| Water temperature | | °C | | |
| Generator Voltage: | | Volts - Red Phase | | |
| | | Volts - White Phase | | |
| | | Volts - Blue Phase | | |
| Generator Amperage: | | Amps - Red Phase | | |
| | | Amps - White Phase | | |
| | | Amps - Blue Phase | | |
| Generator speed | | RPM | | |

| | | | | |
|---|---|---|---|---|
| **On - load test.** | **110 % of load** | | Amps | at unity (1.0 pf) |
| | | | Amps | at 0.8 pf |
| Time required to run | | minutes | ***Minimum 15 minutes*** | |
| Oil pressure | | BAR | | |
| Battery charging volts | | Volts | | |
| Frequency | | Hz | | |
| Water temperature | | °C | | |
| Generator Voltage: | | Volts - Red Phase | | |
| | | Volts - White Phase | | |
| | | Volts - Blue Phase | | |
| Generator Amperage: | | Amps - Red Phase | | |
| | | Amps - White Phase | | |
| | | Amps - Blue Phase | | |
| Generator speed | | RPM | | |

**One - step load.** 60 % of load _____ Amps at unity (1.0 pf)
_____ Amps at 0.8 pf

Time required to run _____ minutes ***Minimum 15 minutes***

Oil pressure _____ BAR
Battery charging volts _____ Volts
Frequency _____ Hz
Water temperature _____ °C
Generator Voltage: _____ Volts - Red Phase
_____ Volts - White Phase
_____ Volts - Blue Phase
Generator Amperage: _____ Amps - Red Phase
_____ Amps - White Phase
_____ Amps - Blue Phase
Generator speed _____ RPM

**Sound levels.**

Inlet side _____ dbA @ 7 meters
Outlet side _____ dbA @ 7 meters
Side of canopy / container _____ dbA @ 7 meters

**Fault simulation / testing.** ***Some engines and controllers cannot simulate "fault simulation" due to a Cambus installation***

| | Warning | Critical | |
|---|---|---|---|
| Unit not in AUTO | | | |
| Change-over operational | | | |
| By-pass switch operational if applicable | | | |
| Low fuel at 30% of Base Tank Capacity | | | warning |
| No fuel @ 15% of BaseTank Capacity | | | shutdown |
| Emergency stop | | | start inhibit / shutdown |
| Low oil pressure | | | shutdown |
| High engine temperature | | | shutdown |
| Low water | | | shutdown |
| Start fail (3 attempts) | | | shutdown |
| Low alternator voltage | | | shutdown |

**Manual start / stop operation.**

Manual start
Manual stop
Test

**Comments:** _____

Supplier Name: _____ Designation: _____

Signature: _____

Inspected by: _____ Designation: _____

Signature: _____

Date of Test: _____

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

# ANNEXURE 8

## GENERATOR ON-SITE COMMISSONING SHEET (OCT 2020 - Rev 1)

***Copies hereof to be included in the Generator Manuals***

**SITE:** _____ **GENERATOR SIZE:** _____ **KVA**

**TYPE OF INSTALLATION:** _____

**Generator set data:**

**Engine.**
Engine Manufacturer: _____ **Engine Rating** _____ **kVA**
Engine Model No.: _____
Engine Type: _____
Engine Serial No.: _____

**Alternator.**
Alternator Manufacturer: _____ **Alternator Rating** _____ **kVA**
Alternator Model No.: _____
Alternator Serial No.: _____

**Control Panel.**
Control Panel Manufacturer: _____

**Checklist.**

**CANOPY.**

| | | CHECK | OK |
|---|---|---|---|
| 1 | PAINT | | |
| 2 | CONSTRUCTION | | |
| 3 | VERMIN PROOFING | | |
| 4 | WEATHER PROOF | | |
| 5 | SOUND PROOF | | |
| 6 | dB SOUND LEVEL @ 7m MEASURED OUTDOORS | | |
| 7 | DOORS | | |
| 8 | HINGES, LOCKING BARS | | |
| 9 | RUBBER SEALS | | |
| 10 | CANOPY DC LIGHT & SWITCH | | |

**ENGINE / ALTERNATOR / BASE FRAME.**

| | | CHECK | OK |
|---|---|---|---|
| 11 | BASEFRAME CONSTRUCTION | | |
| 12 | ANTI VIBRATION MOUNTS | | |
| 13 | PAINT | | |
| 14 | RADIATOR | | |
| 15 | COOLANT FILLED | | |
| 16 | COOLANT LEVEL INDICATOR | | |
| 17 | OIL FILTER | | |
| 18 | AIR FILTER | | |
| 19 | FUEL FILTER | | |
| 20 | FUEL / WATER SEPERATOR | | |
| 21 | JACKET HEATER | | |
| 22 | BALL VALVES TO JACKET HEATER | | |
| 23 | EXHAUST SYSTEM | | |
| 24 | BALL VALVE TO ENGINE SUMP | | |
| 25 | FUEL SHUT DOWN VALVE | | |
| 26 | FUSIBLE FIRE LINK (IF APPLICABLE) | | |
| 27 | HOSES | | |
| 28 | DRIP TRAY (INDOOR TYPE) | | |
| 29 | DRIP TRAY DRAIN (INDOOR TYPE) | | |
| 30 | DC ALTERNATOR | | |
| 31 | OIL FILLED | | |
| 32 | WIRING AND TERMINATIONS INCLUDING EARTHING | | |
| 33 | TRANSFER PUMP WITH NON-RETURN VALVE, METAL PIPE AND HOSE | | |
| 34 | MOVING PARTS PROTECTION | | |
| 35 | STARTER BATTERY ENCLOSURE | | |
| 36 | STARTER BATTERY DATE STAMPED | | |
| 37 | FUEL TANK PAINTED | | |
| 38 | FUEL LEVEL INDICATORS (ANOLOGUE & ELCTRONIC) | | |
| 39 | ALTERNATOR WINDING CLASS (H) | | |
| 40 | ENGINE / ALTERNATOR RATING LABEL | | |

**GENERAL**

| | | CHECK | OK |
|---|---|---|---|
| 46 | MANUALS | | |
| 47 | TOOL BOX | | |
| 48 | PANEL KEY | | |
| 49 | LABELING (SEE BELOW) | | |
| 50 | WIRING DIAGRAM FRAMED & DISPLAYED | | |

**CONTROL PANEL**

| | | | |
|---|---|---|---|
| 51 | PAINT | | |
| 52 | EARTHING ON ALL DOORS | | |
| 53 | 4 POLE SWITCHING | | |
| 54 | CONTROLLER | | |
| 55 | SELECTOR SWITCH (CONTROLLER) | | |
| 56 | VOLTMETER (AC 500 VOLTS) 7 POSITION | | |
| 57 | MAXIMUM DEMAND INDICATORS X 3 | | |
| 58 | FREQUENCY METER | | |
| 59 | HOUR METER | | |
| 60 | COOLANT TEMPERATURE READING | | CONTROLLER |
| 61 | OIL PRESSURE READING | | CONTROLLER |
| 62 | CHARGING CURRENT METER (DC) | | |
| 63 | CONTACTORS / CHANGE-OVER CB | | |
| 64 | WIRING | | |
| 65 | DC LIGHT | | |
| 66 | BATTERY CHARGER SET TO 60% | | |
| 67 | PANEL LIGHTS | | |
| 68 | EMERGENCY STOP BUTTON | | |
| 69 | PERMANTLY FIXED WING PUMP INSTALLED COMPLETE WITH 5m OF HOSE FITTED WITH A FUEL STRAINER | | |
| 70 | TANK BREATHER INSTALLED | | |
| 71 | SELF BUNDED BASE TANK (YES / NO) OUTDOOR TYPE | | |
| 72 | LAMINATED SCHEMATIC DIGRAM AFIXED TO PANEL DOOR | | |
| 73 | ENGRAVED LABELS AS INDICATED BELOW | | |

**GENERATOR AMF CONTROLLER**

MAKE _____

TYPE _____

SERIAL NUMBER _____
WEBNET DSE 890 Serial No. _____
GATEWAY USB ID No. _____
DATA SIM CARD CELL No. _____
SIM CARD SERVICE PROVIDER VODACOM / MTN
**CIRCLE APPROPRIATE SERVICE PROVIDER**

**LABELING REQUIRED (ALL ENGRAVED OR SCREEN PRINTED LABELS ONLY - NO STICK ON LABELS PERMITTED)**

SIGNS X 3 INDICATING GENERATOR MAY START WITHOUT WARNING (EXTERNAL)

SIGNS X 3 INDICATING UNAUTHORISED ENTRY PROHIBITED ( EXTERNAL)

| | |
|---|---|
| TANK CAPACITY | litres |
| LITRES/HOUR USAGE AT **FULL LOAD** | litres/hr |
| MAIN MCCB | |
| ALTERNATOR MCCB | |
| PHASE ROTATION LABEL | CLOCKWISE OR ANTI-CLOCKWISE |

**GENERATOR CONTROLLER PARARMETERS**

| | YES /NO | COMMENTS |
|---|---|---|
| STARTUP TIME DELAY: 5 SECONDS | | |
| RUN UP TIME / CHANGE OVER DELAY: 5 SECONDS | | |
| ON LOAD DELAY: 10 SECONDS | | |
| MAINS POWER RETURN DELAY: 60 SECONDS | | |
| COOLING DOWN TIME: 120 SECONDS | | |

***NOTE: ALL READINGS TO BE TAKEN AT 50% OF TIME LAPSED.***

**On - load test.** **Site load test** _____ Amps at unity (1.0 pf)
_____ Amps at 0.8 pf

Time required to run _____ minutes ***Minimum 15 minutes***

Oil pressure _____ BAR
Battery charging volts _____ Volts
Frequency _____ Hz
Water temperature _____ °C
Generator Voltage: _____ Volts - Red Phase
_____ Volts - White Phase
_____ Volts - Blue Phase
Generator Amperage: _____ Amps - Red Phase
_____ Amps - White Phase
_____ Amps - Blue Phase
Generator speed _____ RPM

Earth mat readings _____ Ohms
Type of earth mat installed _____
Bonding strap mechnically protected? _____
**YES / NO**

Supply Authority Electrical Phase Rotation Clockwise / Anti clockwise

Generator Electrical Phase Rotation Clockwise / Anti clockwise

**Sound levels.**

Inlet side _____ dbA @ 7 meters
Outlet side _____ dbA @ 7 meters
Side of canopy / container _____ dbA @ 7 meters

**Fault simulation / testing.** ***Some engines and controllers cannot simulate "fault simulation" due to a Cambus installation***

| | **Warning** | **Critical** | |
|---|---|---|---|
| Unit not in AUTO | | | |
| Change-over operational | | | |
| By-pass switch operational (if applicable) | | | |
| Low fuel at 30% of Base Tank Capacity | | | warning |
| No fuel @ 15% of BaseTank Capacity | | | shutdown |
| Emergency stop | | | start inhibit / shutdown |
| Low oil pressure | | | shutdown |
| High engine temperature | | | shutdown |
| Low water | | | shutdown |
| Start fail (3 attempts) | | | shutdown |
| Low alternator voltage | | | shutdown |

**Manual start / stop operation.**

Manual start
Manual stop
Test

**Comments:** _____

Supplier Name: _____ Designation: _____

Signature: _____

Inspected by: _____ Designation: _____

Signature: _____

Date of Commisioning Test: _____

KWAZULU-NATAL PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

# ANNEXURE 9

## GENERATOR O & M MANUALS CHECK SHEET (OCT 2020 Rev 1)

**3 SETS OF MANUAL ARE REQUIRED. INFORMATION REQUIRED AS PER LIST BELOW**

***This check sheet is to be included in the manuals***

**SITE:** _____ **GENERATOR SIZE:** _____ **kVA**

**TYPE OF INSTALLATION:** _____

| **Engine.** | **Yes** | **No** | **If No, provide reasons / Comments** |
|---|---|---|---|
| Operating and Maintenance Manuals | | | |
| Equipment Data Sheet showing the following: | | | |
| Manufacturer | | | |
| Engine Type | | | |
| Rating | | | |
| Serial Number | | | |
| Engine Number | | | |

| **Alternator.** | **Yes** | **No** | **If No, provide reasons / Comments** |
|---|---|---|---|
| Operating and Maintenance Manuals | | | |
| Equipment Data Sheet showing the following: | | | |
| Manufacturer | | | |
| Alternator Type | | | |
| Alternator Code | | | |
| Serial Number | | | |
| Speed | | | |
| Power Factor | | | |
| Rating | | | |
| Insulation Class | | | |
| Protection | | | |
| Voltage | | | |
| Automatic Voltage Regulator (AVR) | | | |

| **Generator Control Panel** | **Yes** | **No** | **If No, provide reasons / Comments** |
|---|---|---|---|
| Manufacturer | | | |
| Type | | | |
| Serial Number | | | |
| Schematic Wiring Diagram Number | | | |

| **Generator Controller** | **Yes** | **No** | **If No, provide reasons / Comments** |
|---|---|---|---|
| Operating and Maintenance Manuals | | | |
| Equipment Data Sheet showing the following: | | | |
| Manufacturer | | | |
| Type | | | |
| Serial Number | | | |

| **Webnet Gateway** | **Yes** | **No** | **If No, provide reasons / Comments** |
|---|---|---|---|
| Operating and Maintenance Manuals | | | |
| Equipment Data Sheet showing the following: | | | |
| Manufacturer | | | |
| Type | | | |
| Gateway USB ID | | | |
| SIM Card Service Provider | | | |
| SIM Card Cell Number | | | |

| **Battery** | **Yes** | **No** | **If No, provide reasons / Comments** |
|---|---|---|---|
| Equipment Data Sheet showing the following: | | | |
| Manufacturer | | | |
| Capacity | | | |
| System Voltage | | | |

| **Fuel Tank/s** | **Yes** | **No** | **If No, provide reasons / Comments** |
|---|---|---|---|
| Equipment Data Sheet showing the following: | | | |
| Fuel Consumption - Litres/Hour @ Full Load | | | |

| **Hand Pump** | **Yes** | **No** | **If No, provide reasons / Comments** |
|---|---|---|---|
| Equipment Data Sheet showing the following: | | | |
| Manufacturer | | | |
| Type: Hand operated / Electrically operated | | | |

| **Govenor** | **Yes** | **No** | **If No, provide reasons / Comments** |
|---|---|---|---|
| Manufacturer | | | |
| Type | | | |

| **Cooling System** | **Yes** | **No** | **If No, provide reasons / Comments** |
|---|---|---|---|
| Equipment Data Sheet showing the following: | | | |
| Manufacturer | | | |
| Part Number | | | |
| Reference Number | | | |
| Serial Number | | | |

| **Immersion Heater** | **Yes** | **No** | **If No, provide reasons / Comments** |
|---|---|---|---|
| Equipment Data Sheet showing the following: | | | |
| Manufacturer | | | |
| Type | | | |
| Voltage | | | |

| **Engine Filters in accordance with Manufacturer's Specifications.** | **Yes** | **No** | **If No, provide reasons / Comments** |
|---|---|---|---|
| Equipment Data Sheet showing the following: | | | |
| Oil Filter Part Number | | | |
| Fuel Filter Part Number | | | |
| Water Separator | | | |
| Air Filter Housing | | | |
| Air Filter | | | |

| **Lubrication in accordance with Manufacturer's Specifications.** | **Yes** | **No** | **If No, provide reasons / Comments** |
|---|---|---|---|
| Oil Type | | | |
| Coolant Type & Ratio mix | | | |

| | | | |
|---|---|---|---|
| **Factory Acceptance Test Sheet** | | | |
| **Site Commissioning Test Sheet** | | | |
| **Generator & Panel Certificate of Compliance - SANS 10142-1** | | | |
| **Associated Electrical Works Certificate of Compliance - SANS 10142-1** | | | |
| **Generator Earth Mat Test Results Sheet** | | | |

**Supplier Name:** _____ **Designation :** _____

**Signature:** _____

**Inspected by:** _____ **Designation:** _____

**Signature** _____