



TENDER DOCUMENT

FOR

**CONTRACTOR APPOINTMENT FOR THE
TERMINAL SUBSTATION 2B SWITCHGEAR
REPLACEMENT AT OR TAMBO INTERNATIONAL
AIRPORT FOR 12 MONTHS.**

Tender Reference Number: ORTIA7039/2022/RFP

NOVEMBER 2022

Issued by
Airports Company South Africa
O. R. Tambo International Airport

Note:

Upon Acceptance of the Offer by the Employer, this Tender Document becomes the Contract Document, subsequent to which, all references to the term "Tenderer(s)" then become synonymous with the term "Contractor".

VOLUME 1

NAME OF TENDERER:

TENDERER'S DETAILS

1.	NAME OF TENDERER (BIDDING ENTITY)	(FULL NAME, i.e. (CC, (Pty) Ltd, JV, SOLE PROPRIETOR
.2.	TEL NUMBER	
.3.	FAX NUMBER	
.4.	EMAIL	
5.	NAME OF CONTACT	
6.	NATIONAL TREASURY CSD REGISTRATION NUMBER	

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T1.1 Tender Notice and Invitation to Tender

Airports Company South Africa SOC Limited **invites tenders for** the Terminal Substation 2B Switchgear Replacement at O. R. Tambo International Airport for 12 months.

Only tenderers who are a CIDB contractor grading of **4EP/EB** or higher as stated on the Tender Data may submit tender offers.

Tender Document Availability

Tender document are available from **07 November 2022** for free download from National Treasury's eTender Publication Portal (<http://www.etenders.gov.za>) and ACSA Tender Bulletin website - <http://www.airports.co.za/business/tender-bulletin/current-and-future-tenders> Kindly print and complete.

Queries relating to the issue of these documents may be addressed to Mr Potso Makgatho

E-mail address: potso.makgatho@airports.co.za

Closing date for enquiries is **28 November 2022 close of business day.**

Compulsory Tender Briefing Session

- Briefing Date: **17th November 2022**
- Briefing Time: **10H00 AM (South African Time)**
- Briefing Venue: **MEDIA ROOM (Next to the Post Office), O R Tambo International Airport.**

Failure to attend the Compulsory Briefing session will result in the disqualification of the bidder at Mandatory Requirements stage.

Physical Tender Submission and Closing Date

- Tender Closing Date: **08th December 2022**
- Tender Closing Time: **10H00 AM (South African Standard Time)**
- Tender Closing Venue: **Tender C, 3rd floor, Tender Office, ACSA offices, O R Tambo International Airport**

No late tenders will be accepted.

Bidders to ensure that their names and contacts are reflected on the cover of the bid document.

Tenders may only be submitted on the tender documentation that is issued.

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

T1.2 Tender Data

The conditions of tender are the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity in Construction Procurement (8 August 2019) as published in Government Gazette 42622, Board Notice 423 of 2019 of 8 August 2019. (See www.cidb.org.za).

The Standard Conditions of Tender make several references to the Tender Data for details that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

Clause Number	Tender Data
C.1	GENERAL
C.1.1	The Employer is AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED
C.1.2	<p>The Tender Documents issued by the Employer comprise:</p> <p>Part T1: Tendering Procedures</p> <ul style="list-style-type: none"> T1.1 Tender notice and invitation to tender T1.2 Tender data T1.3 CIDB Standard conditions of tender <p>Part T2: Returnable Document</p> <ul style="list-style-type: none"> T2.1 List of returnable documents T2.2 Returnable schedule <p>Part C1: Agreements and Contract Data</p> <ul style="list-style-type: none"> C1.1 Form of offer and acceptance C1.2 Contract data <p>Part C2: Pricing Schedule</p> <ul style="list-style-type: none"> C2.1 Pricing instructions C2.2 Activity Schedule with Price List <p>Part C3: Service Information</p> <p>Part C4: Site information</p>
C.1.4	<p>The Employer's Agent is: Potso Makgatho</p> <p>Email address: potso.makgatho@airports.co.za</p> <p>All communication during the Tender period shall not be made to the Principal Agent but to ACSA's Supply Chain Department</p>
C.1.5	<p>C1.5 Cancellation and Re-Invitation of Tenders</p> <p>C1.5.1 An employer may, prior to the award of the tender, cancel a tender if-</p> <ul style="list-style-type: none"> a) due to changed circumstances, there is no longer a need for the engineering and construction works specified in the invitation. 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. <p>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</p> <p>C.1.5.3 An employer may only with the prior approval of the relevant treasury cancel a tender invitation for the second time.</p>
C.1.6	Procurement procedures

	<p>C.1.6.1 General</p> <p>Unless otherwise stated in the tender data, a contract will, subject to C.3.13, be concluded with the tenderer who in terms of C.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.</p> <p>C.1.6.2 Competitive negotiation procedure</p> <p>C.1.6.2.1 Where the tender data require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of C.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of C.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>
C.2	TENDERER'S OBLIGATIONS
C.2.1	<p>Eligibility</p> <p>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.</p> <p>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.</p>
C.2.2	<p>Cost of tendering</p> <p>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.</p>
C.2.3	<p>Check documents</p> <p>Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.</p>

C.2.4	<p>Confidentiality and copyright of documents</p> <p>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.</p>
C.2.6	<p>Acknowledge addenda</p> <p>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.</p>
C.2.7	<p>Clarification meeting</p> <p>The arrangements for a non-compulsory briefing session are as stated in the Tender Notice and Invitation to Tender (T1.1).</p> <p>Tenderers must sign the attendance list in the name of the tendering entity. Addenda will be issued to and tenders will be received only from those tendering entities appearing on the attendance list.</p>
C.2.8	<p>Seek clarification</p> <p>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.</p>
C.2.9	<p>Insurance</p> <p>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.</p>
C.2.10.3	<p>This contract shall not be subject to Contract Price Adjustments, foreign fluctuations, etc and all rates and prices shall remain fixed, final and binding for the full duration of this contract.</p>
C.2.11	<p>Alterations to documents</p> <p>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.</p>
C.2.12	<p>Alternative bids will not be considered. (If applicable please copy the clause as per SFU 2019)</p>
C.2.13	<p>Submitting a tender offer</p> <p>C.2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in a joint venture to provide the whole of the works identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.</p> <p>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.</p> <p>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.</p> <p>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.</p>

	<p>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.</p>
C.2.14	<p>Information and data to be completed in all respects</p> <p>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.</p>
C.2.15	<p>Closing time</p> <p>The Employer's details and address for delivery of tender offers and identification details that are to be shown on each tender offer package are:</p> <p>Location of tender box C: ACSA North Wings Offices International Terminal Building 3rd Floor O. R. Tambo International Airport</p> <p>Physical address: ACSA North Wings Offices International Terminal Building 3rd Floor O. R. Tambo International Airport</p> <p>Identification details: Bid Ref. No: ORTIA7039/2022/RFP</p> <p>Title: TERMINAL SUBSTATION 2B SWITCHGEAR REPLACEMENT AT OR TAMBO INTERNATIONAL AIRPORT FOR 12 MONTHS</p> <p>Closing Date: 08 December 2022 Time 10:00am</p>
C.2.16	<p>Tender offer validity</p> <p>C.2.16.1 Hold the tender offer(s) valid for eighty-four (84) working days for acceptance by the employer at any time during the validity period stated after the closing time stated in the tender data.</p> <p>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.</p> <p>C.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted. If the validity period stated in C.2.16 lapses before the employer evaluating tender, the contractor reserves the right to review the price based on Consumer Price Index (CPI).</p> <p>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".</p>
C.2.17	<p>Clarification of tender offer after submission</p> <p>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.</p>
C.2.20	<p>Submit securities, bonds and policies</p> <p>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.</p>
C.3	EMPLOYER'S UNDERTAKINGS

C.3.1	<p>Respond to requests from the tenderer</p> <p>The Employer will respond to requests for clarification received up to five (5) working days before the tender closing time.</p>
C.3.2	<p>Issue Addenda</p> <p>Addenda will be issued until three (3) working days before the tender closing time.</p>
C.3.3	<p>Return late tender offers</p> <p>Tender offers received after the closing time stated in the Tender Data will be returned, unopened, (unless it is necessary to open a tender submission to obtain a forwarding address), to the tenderer concerned.</p>
C.3.4	<p>Public opening of bids and price reading:</p> <p>Tender Closing Date: 08th December 2022</p> <p>Tender Closing Time: 10H30 AM (South African Standard Time)</p> <p>Tender Closing Venue: Kudu Boardroom, 3rd Floor, ACSA offices, North Wing, O R Tambo International Airport</p>
C.3.7	<p>Grounds for rejection and disqualification</p> <p>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.</p>
C.3.8	<p>Test for Responsiveness</p> <p>C.3.8.1 Determine, after opening and before detailed evaluation, whether each tender offer properly received:</p> <ul style="list-style-type: none"> a) complies with the requirements of these Conditions of Tender, (scope work, pricing, proposed amendments and qualifications, cover letters must be considered) b) has been properly and fully completed and signed, and c) is responsive to the other requirements of the tender documents. (check certificates if attached, e.g. Qualifications, etc allow bidder reasonable time to submit.) <p>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:</p> <ul style="list-style-type: none"> 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. <p>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.</p>
C.3.9	<p>Arithmetical errors, omissions and discrepancies.</p>

	<p>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.</p> <p>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 C.3.11 for:</p> <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> (i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or (ii) the summation of the prices. <p>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 or accept the corrected total of prices.</p> <p>C.3.9.4 Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows:</p> <ul style="list-style-type: none"> 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	<p>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.</p>

C.3.11	<p>Stage 1 Test for Responsiveness (as per clause C.3.8)</p> <p>Stage 2 Pre-Qualification Criteria</p> <p>In terms of the PPPFA Regulation 4, an organ of state can apply pre-qualifying criteria to advance certain Designated Groups.</p> <p>Accordingly, only the bidders with a minimum B-BBEE status Level 1 and Level 2 are eligible to bid. Please note in the event of a joint venture (JV) a valid consolidated BBBEE verification in the name of the JV shall be submitted. Please refer to returnable document Form.</p> <p>A tenderer that fails to meet the above-mentioned pre-qualifying criteria at closing date, will be disqualified and not further evaluated.</p> <p>Stage 3 Mandatory Administration Criteria</p> <ul style="list-style-type: none"> • Completed in full and signed Form of offer C1.1. • Attendance of the Compulsory Briefing Session • Only tenderers who are a CIDB contractor grading of 4EP/EB or higher. • Letter of Good standing with workman’s compensation commissioner COIDA. • Completed in full and signed Bidder’s Disclosure Form (SBD 4 Attached) <p>Stage 4 Functionality Evaluation Criteria</p> <p>Functionality is the terminology used to define the technical ability of the Tenderer, based on experience to deliver the required product in accordance with the specialised quality, reliability, and functionality.</p> <p>1) Points allocated for Functionality shall be evaluated in accordance with the criteria as listed below. An overall minimum threshold of 58 points out of 100 must be achieved for the tender to be eligible for further evaluation on Price and B-BBEE. Bidders who also fail to achieve the minimum score per criteria will be disqualified and not be eligible for further evaluations.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Description of quality criteria</th> <th rowspan="2">WQ</th> <th>Sub criteria</th> <th rowspan="2">Maximum Score</th> <th rowspan="2">Minimum Threshold</th> </tr> <tr> <th>Quality Score</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Bidder’s resource proposal</td> <td rowspan="2">30</td> <td>Qualifications</td> <td>15</td> <td>7</td> </tr> <tr> <td>Year of experience in similar works</td> <td>15</td> <td>9</td> </tr> <tr> <td rowspan="2">References and experience</td> <td rowspan="2">30</td> <td>At least more than three (3) references</td> <td>15</td> <td>9</td> </tr> <tr> <td>Completion Certificates for reference letters provided</td> <td>15</td> <td>9</td> </tr> <tr> <td rowspan="2">Product Functionality</td> <td rowspan="2">40</td> <td>Risk Management</td> <td>20</td> <td>12</td> </tr> <tr> <td>Proposed Project Schedule</td> <td>20</td> <td>12</td> </tr> </tbody> </table> <p>The obligation to demonstrate compliance with all the above will remain with the Tenderer and ACSA’s decision in this regard is final.</p>	Description of quality criteria	WQ	Sub criteria	Maximum Score	Minimum Threshold	Quality Score	Bidder’s resource proposal	30	Qualifications	15	7	Year of experience in similar works	15	9	References and experience	30	At least more than three (3) references	15	9	Completion Certificates for reference letters provided	15	9	Product Functionality	40	Risk Management	20	12	Proposed Project Schedule	20	12
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		Proposed Project Schedule	20	12																											

(a) **Qualifications – 15 points (Proof of qualification should be attached to the resources' CV)**

Site Manager (6 points)	Electrician (4 points)	Safety Officer (3 points)	Other resources (2 points)
N6 in Electrical or S4 Diploma in Electrical or higher and ORHVS certificate (4 points)	N2 in Electrical or higher and Trade test certificate and Installation Electrician Wireman's License (3 points)	Safety Qualification / Certificate (3 points)	Organogram showing key resources and additional (Boiler maker, Fitter, Rigger, assistants) 2 Points
Project Management Certificate (2)	ORHVS (1 Points)		
Minimum 04 points Maximum 06 points	Minimum 03 points Maximum 04 points	Minimum 0 points Maximum 03 points	Minimum 0 points Maximum 02 points

NOTE;

The obligation to demonstrate compliance with all of the above will remain with the Bidder and ACSA's decision in this regard will be final. Bidders that do not submit supporting documentation such as CVs and certified proof (**Not more than 4 months ago**) of Qualifications / Certificates will score 0 points for that specific criterion.

Functionality hurdle breakdown

(a) Years of experience in the **Installation of Switchgear – 15 points**
(Proof of experience should be attached/shown to the detailed resource's CV with references)

Site Manager (6)	Electrician (4)	Safety Officer (3)	
0 – 5 years = 0 points	0 – 5 years = 0 points	Less than 12 months = 0 points	
> 5 years – 10 years = 4 points	> 5 years – 10 years = 4 points	1 – 3 years = 1 points	
More than 10 years = 6 points	More than 10 years = 6 points	> 3 years = 3 points	

(b) Reference of Bidding Company – 15 points

The Bidder should provide proof of at least Three (3) different company references of similar work done (Sub-Station LV Switchgear) and Completion Certificates for reference letters provided.

The reference letter must contain the following

1. Company name / client
2. Should be in a letterhead from the company / client,
3. Type of Services Provided,
4. Value of Contract,
5. Duration of Contract,
6. Contact number,
7. Email address,

8. issue date and
9. It must be signed by authorised official.

At least more than three (3) references – 15 Points
Less than 3 references = 0 Points
3 references = 9 Points
More than 3 references = 15 Points

(The Bidder should provide Risk Management Plan associated with Project Schedule as per Part 2 Returnable Documents. Also on specifications brochures, technical specification and SABS types – testing manufacturing certificate to be attached.)

NB Bidder to obtain information from compulsory briefing session, compulsory site visit and drawings

Risk Management (Maximum 20 points Minimum 12 Points)

Risk Management (Contract start-up proposal) – 20 Points	
Good = 20 Points	The risk management plan addresses to each item on the critical path and high-risk activities
Satisfactory = 12 Points	The risk management plan only addresses the critical path
Poor= 0 Points	Not addressing high-risk activities and critical path

Proposed project schedule (Maximum 20 points Minimum 12 Points)

Proposed Project Schedule (To be accompanied with method Statement)	<p>Submit a schedule in a</p> <ul style="list-style-type: none"> • Gantt Chart, (4 Points) • With Activities, (4 Points) • Critical Path, (4 Points) • Schedule to include resources, (4 Points) • Duration must be less than 12 months (4 Points) = Maximum 20 Points = Minimum 12 Points
	No Gantt Chart/Activities/Critical Path/more than 12 months = 0 points

Stage 5 Determine acceptability of preferred tenderer:

Perform a risk analysis on the preferred tenderer to ascertain if any of the following might present an unacceptable commercial risk to the employer:

- Unduly high or unduly low tendered rates or amounts in the tender offer.
- Contract data provided by the tendered; or

- The contents of the tender returnable which are to be included in the contract.

Stage 6 Price and BBEE (80/20)

- (a) Tenderers will be evaluated and adjudicated by the Employer using “The 80/20 preference point system” which awards points on the basis of:
- The Tendered price (as per form of offer) – 80%
 - BBEE – 20%
- (b) The Employer will award the Contract to a Tenderer who is qualified to undertake the Works and whose Tender technically and contractually complies with the specification.

The 80/20 preference points system for acquisition of services, works or goods with a Rand value below R 50 million

The following formula must be used to calculate the points for price in respect of tenders with a Rand value above R50 000 000 (all applicable taxes included):

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

P_s = Points scored for comparative price of tender or offer under consideration;

P_t = Comparative price of tender or offer under consideration; and

P_{min} = Comparative price of lowest acceptable tender or offer.

- (c) Subject to subparagraph(5)(c), points must be awarded to a tender for attaining the B-BBEE status level of contributor in accordance with the table below:

B-BBEE status level of contributor	Number of points (80/20)
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

Airports Company South Africa reserves the right to amend or replace the preference point system used in accordance with the company’s tender procedure.

C.3.12	Insurance provided by the employer Refer to Contract Data
C.3.13	<p>C.3.13 Acceptance of tender offer</p> <p>Accept the tender offer; if in the opinion of the employer, it does not present any risk and only if the tenderer:</p> <ul style="list-style-type: none"> 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.

Standard Conditions of Tender

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 C.2 and C.3, timeously and with integrity, and behave equitably, honestly and transparently, 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. Tenderers shall declare any potential conflict of interest in their tender submissions. Employees, agents and advisors of the employer shall declare any conflict of interest to whoever is responsible for overseeing the procurement process at the start of any deliberations relating to the procurement process or as soon as they become aware of such conflict and abstain from any decisions where such conflict exists or recuse themselves from the procurement process, as appropriate.

Note: 1) A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.

2) Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.

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

C.1.2 Tender Documents

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

C.1.3 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 fulfill 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.
- b) **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 readily read, copied and recorded. Communications shall be in the English language. The employer shall not take any responsibility for non-receipt of communications from or by a tenderer. The name and contact details of the employer's agent are stated in the tender data.

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 invitation;
- 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 C.3.13, be concluded with the tenderer who in terms of C.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 require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of C.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of C.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 (Chosen option)

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.

C.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 tenderers 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 fourteen (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 a single tendering entity or as a member in a joint venture to provide the whole of the works 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 substituted 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 stated in C.2.16 lapses before the employer evaluating tender, 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 employer's 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 twenty-eight (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 requests 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) working 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 tenderers' agents who choose to attend at the time and place stated in the tender data and announce the name of each tenderer whose technical proposal is opened.

C.3.5.2 Evaluate 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 C.3.11 for:

- a) the gross misplacement of the decimal point in any unit rate;
- b) omissions made in completing the pricing schedule or bills of quantities; or
- c) arithmetic errors in:
 - (i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or
 - (ii) the summation of the prices.

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 or 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 the 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.

AIRPORTS COMPANY SOUTH AFRICA

O. R. TAMBO INTERNATIONAL AIRPORT

TENDER REF. No: ORTIA7039/2022/RFP

CONTRACTOR APPOINTMENT FOR THE TERMINAL SUBSTATION 2B SWITCHBOARD REPLACEMENT AT OR TAMBO INTERNATIONAL AIRPORT FOR 12 MONTHS

Part T2: Returnable Documents

T2.1: List of Returnable Document

The tenderer must complete the following returnable documents:	<u>Completed</u> <u>(tick)</u>
1 Returnable Schedules required for tender evaluation purposes only	
A1: Certificate of Attendance at Briefing session (Not Applicable)	
A2: Record of Addenda to Tender Documents	
A3: Certificate of Authority for Signatory	
A4: Certificate of Authority for Joint Ventures (where applicable)	
A5: Schedule of the Tenderer's Recent Experience related to this Project	
A6: Completion Certificates of Previous Projects Completed (Applicable)	
A7: Client reference letters on clients' letterhead of Previous Projects Completed	
A8: Proof of Contract Values of Previous Projects Completed (Applicable)	
A9: Schedule of Current Commitments	
A10: SBD 4: Bidder's Disclosure Form	
A11: SBD 6.1: Preference points claim form in terms of preferential procurement Regulations	
A12: SBD 6.2 (Declaration for local content and production for PPPFA designated sectors	
A13:	
A14:	
2 Other documents required only for tender evaluation purposes	
B1: Proof of registration for Contractor's WCA registration and or COID	
B2: A certified copy of Certificate of Contractor Registration issued by the Construction Industry Development Board	
B3: An original or certified copies valid Tax Clearance Certificate or SARS Pin issued by the South African Revenue Services.	
B4: An original Bank Statement of good financial standing (Bank Rating) for the tender sum	
B5: Central Supplier Database (CSD) proof of registration.	

The tenderer must complete the following returnable documents:	<u>Completed</u> <u>(tick)</u>
3 Returnable Schedules required for tender evaluation purposes that will be incorporated into the contract	
C1.1 Form of Offer and Acceptance	
C1: Compulsory Enterprise Questionnaire	
C2: Schedule of Proposed Subcontractors	
C4: Subcontractor's Supporting Documents (Not Applicable)	
C5: Plant and Equipment	
C6: A certified copy of B-BBEE Verification Certificate	
C7: CV's of key personnel	
C8: Certified Certificates of Qualifications of Key Personnel.	
C10 Occupational Health and Safety Questionnaire	
C11 Schedule of Information to be provided by Tenderer	
C12 Proposed Amendments and Qualifications	



**CONTRACTOR APPOINTMENT FOR THE TERMINAL SUBSTATION 2B SWITCHBOARD REPLACEMENT AT OR TAMBO INTERNATIONAL AIRPORT FOR 12 MONTHS
TENDER REF. No: ORTIA7039/2022/RFP**

T2.2 Returnable Schedules

FORM A1. Certificate of Attendance of the Briefing Session (N/A)

This is to certify that

I,

Representative of (tenderer).....

.....

of (address).....

.....

.....

e-mail

telephone number

fax number.....

visited the compulsory brief session held on date.....

Signed		Date	
Name		Position	
Tenderer			



Signed by ACSA
Representative:

Name:

FORM A2. Record of Addenda to Tender Documents

We confirm that the following communications received from the Employer before the submission of this response for Tenders, amending the Tenders documents, have been taken into account in this response:

	Date	Title or Details
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Attach additional pages if more space is required.

Signed		Date	
Name		Position	
Tenderer			

Form A3: Certificate of Authority for Signatory

- (1) Signatories for close corporations and companies shall confirm their authority by attaching to this form a duly signed and dated copy of the relevant resolution of their members or their board of directors, as the case may be.
- (2) In the event that the tenderer is a joint venture, a certificate of authority for signatories (Form A3) is required from all members of the joint venture and the designated lead member shall be clearly identified as requested by tender condition C2.13.4.

An example is shown below:

"By resolution of the board of directors taken on 20.....

Mr/Ms

whose signature appear below, has been duly authorized to sign all documents in connection with this tender for Tender number **ORTIA7039/2022/RFP** and any contract which may arise there from on behalf of

(block capitals)

Signed on behalf of Company:

In his/her capacity as:

Date:..... Signatory of Authority:

Witnesses:

.....
 Signature

.....
 Signature

.....
 Name (print)

.....
 Name (print)

Attach:

- Latest Audited Annual Financial Report
- Bank reference Letter

Signed		Date	
--------	--	------	--



Name		Position	
Tenderer			



FORM A4. Certificate of Authority of Joint Ventures (where applicable)

This Returnable Schedule is to be completed by joint ventures.

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Ms . . .
 , authorised signatory of the company
 , acting in the capacity of lead partner,
 to sign all documents in connection with the tender offer and any contract resulting from it on our behalf.

Please attach JV agreement stipulation % share of each JV

NAME OF FIRM	ADDRESS	DULY AUTHORISED SIGNATORY
Lead partner		Signature: Name: Designation:
		Signature: Name: Designation:
		Signature: Name: Designation:

Signed		Date	
Name		Position	
Tenderer			



Employer, contact person and telephone number	Principal Agent (Name, Tel No, Contact Person)	Description of works/ Project Name	Value of work inclusive of VAT (Rand)	Date started	Date completed	COMPLETION CERTIFICATE OR CLIENT REFERENCE LETTER	
						YES	NO



FORM A5. Schedule of the Tenderer’s Experience

Bidders should very briefly describe his or her experience in this regard and attach this to this schedule. See format below

The description should be put in tabular form with the following headings:

Note: When completing the above schedule, Tenderer’s must take cognisance of the evaluation criteria as described in the Tender Data, Part T1.2, Clause C.3.11

The undersigned, who warrants that he / she is duly authorized to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed		Date	
Name		Position	
Tenderer			



FORM A6 Certified Copies of Completion Certificates of Previous Projects Completed

Please attach Completion Certificates (Practical Completion) of Previous Projects Completed as listed under Form A5 above to this page.
 A minimum of three (3) certificates required for relevant projects

The undersigned, who warrants that he / she is duly authorized to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed		Date	
Name		Position	
Tenderer			



FORM A7 Certified Copies of Client Reference Letters of Previous Projects Completed

Please attach certified copies of Client Reference Letters of Previous Projects Completed as listed under Form A5 above to this page.
 A minimum of three (3) reference letters required from the client bodies/Principal Agent.

The undersigned, who warrants that he / she is duly authorized to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed		Date	
Name		Position	
Tenderer			



Form A8 Proof of Contract Values of Previous Projects Completed

Please attach proof of Contract Values of Previous Projects Completed as listed under Form A5 above to this page. A minimum of three (3) certificates required for relevant projects

The undersigned, who warrants that he / she is duly authorized to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed		Date	
Name		Position	
Tenderer			

A10. DECLARATION OF INTEREST

1. Any legal person, including persons employed by the state¹, or persons having a kinship with persons employed by the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid (includes a price quotation, advertised competitive bid, limited bid or proposal). In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the bidder or his/her authorised representative declare his/her position in relation to the evaluating/adjudicating authority where-

- the bidder is employed by the state; and/or
- the legal person on whose behalf the bidding document is signed, has a relationship with persons/a person who are/is involved in the evaluation and or adjudication of the bid(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the bid.

2. **In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**

2.1 Full Name of bidder or his or her representative:
.....

2.2 Identity Number:
.....
...

2.3 Position occupied in the Company (director, trustee, shareholder²):
.....

2.4 Company Registration Number:
.....

2.5 Tax Reference Number:
.....

2.6 VAT Registration Number:
.....

2.6.1 The names of all directors / trustees / shareholders / members, their individual identity numbers, tax reference numbers and, if applicable, employee / persal numbers must be indicated in paragraph 3 below.

¹“State” means –

- (a) any national or provincial department, national or provincial public entity or



- constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
- (b) any municipality or municipal entity;
- (c) provincial legislature;
- (d) national Assembly or the national Council of provinces; or
- (e) Parliament.

²"Shareholder" means a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.

2.7 Are you or any person connected with the bidder presently employed by the state? **YES / NO**

2.7.1 If so, furnish the following particulars:

Name of person / director / trustee / shareholder/ member:

.....

Name of state institution at which you or the person connected to the bidder is employed :

.....

Position occupied in the state institution:

.....

Any other particulars:

.....

.....

.....

2.7.2 If you are presently employed by the state, did you obtain the appropriate authority to undertake remunerative work outside employment in the public sector? **YES / NO**

2.7.2.1 If yes, did you attached proof of such authority to the bid document? **YES / NO**

(Note: Failure to submit proof of such authority, where applicable, may result in the disqualification of the bid.

2.7.2.2 If no, furnish reasons for non-submission of such proof:

.....

.....



.....
2.8 Did you or your spouse, or any of the company’s directors / trustees / shareholders / members or their spouses conduct business with the state in the previous twelve months? **YES / NO**

2.8.1 If so, furnish particulars:
.....
.....
.....

2.9 Do you, or any person connected with the bidder, have any relationship (family, friend, other) with a person employed by the state and who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

2.9.1 If so, furnish particulars.
.....
.....
.....

2.10 Are you, or any person connected with the bidder, aware of any relationship (family, friend, other) between any other bidder and any person employed by the state who may be involved with the evaluation and or adjudication of this bid? **YES/NO**

2.10.1 If so, furnish particulars.
.....
.....
.....

2.11 Do you or any of the directors / trustees / shareholders / members of the company have any interest in any other related companies whether or not they are bidding for this contract? **YES/NO**

2.11.1 If so, furnish particulars:
.....
.....
.....



3 Full details of directors / trustees / members / shareholders.

Full Name	Identity Number	Personal Reference Number	Tax Number	State Number / Personal Number	Employee Number

4 DECLARATION

I, _____ THE _____ UNDERSIGNED
 (NAME).....

CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 23 OF THE GENERAL CONDITIONS OF CONTRACT SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....
 Signature

.....
 Date

.....
 Position

.....
 Name of bidder

SBD 6.1

A11. PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution

NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017.

1. GENERAL CONDITIONS

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

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2

- a) The value of this bid is estimated to exceed R50 000 000 (all applicable taxes included) and therefore the 90/10 preference point system shall be applicable; or
- b) The 90/10 preference point system will be applicable to this tender

1.3 Points for this bid shall be awarded for:

- (a) Price; and
- (b) B-BBEE Status Level of Contributor.

1.4 The maximum points for this bid are allocated as follows:

	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTOR	20
Total points for Price and B-BBEE must not exceed	100

1.5 Failure on the part of a bidder to submit proof of B-BBEE Status level of contributor together with the bid, will be interpreted to mean that preference points for B-BBEE

status level of contribution are not claimed.

- 1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

- (a) **“B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (b) **“B-BBEE status level of contributor”** means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (c) **“bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals;
- (d) **“Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (e) **“EME”** means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (f) **“functionality”** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.
- (g) **“prices”** includes all applicable taxes less all unconditional discounts;
- (h) **“proof of B-BBEE status level of contributor”** means:
 - 1) B-BBEE Status level certificate issued by an authorized body or person;
 - 2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
 - 3) Any other requirement prescribed in terms of the B-BBEE Act;
- (i) **“QSE”** means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (j) **“rand value”** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;



5. BID DECLARATION

5.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

6. B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 4.1

6.1 B-BBEE Status Level of Contributor: . =(maximum of 10 or 20 points)

(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.

7. SUB-CONTRACTING

7.1 Will any portion of the contract be sub-contracted?

(Tick applicable box)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

7.1.1 If yes, indicate:

- i) What percentage of the contract will be subcontracted.....%
- ii) The name of the sub-contractor.....
- iii) The B-BBEE status level of the sub-contractor.....
- iv) Whether the sub-contractor is an EME or QSE

(Tick applicable box)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

v) Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations,2017:



Designated Group: An EME or QSE which is at last 51% owned by:	EME √	QSE √
Black people		
Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		
Black people who are military veterans		
OR		
Any EME		
Any QSE		

8. DECLARATION WITH REGARD TO COMPANY/FIRM

8.1 Name of company/firm:.....

8.2 VAT registration number:.....

8.3 Company registration number:.....

8.4 TYPE OF COMPANY/ FIRM

- Partnership/Joint Venture / Consortium
 - One person business/sole propriety
 - Close corporation
 - Company
 - (Pty) Limited
- [TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....



8.6 COMPANY CLASSIFICATION

- Manufacturer
 - Supplier
 - Professional service provider
 - Other service providers, e.g. transporter, etc.
- [TICK APPLICABLE BOX]

8.7 Total number of years the company/firm has been in business:.....

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBEE status level of contributor indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we 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 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
 - (a) disqualify the person from the bidding 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 bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury 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.



WITNESSES

1.

2.

.....
SIGNATURE(S) OF BIDDERS(S)

DATE:

ADDRESS

.....

.....

SBD 6.2

A12 DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

This Standard Bidding Document (SBD) must form part of all bids invited. It contains general information and serves as a declaration form for local content (local production and local content are used interchangeably).

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2017, the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2011 (Edition 1) and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

1. General Conditions

- 1.1. Preferential Procurement Regulations, 2017 (Regulation 8) make provision for the promotion of local production and content.
- 1.2. Regulation 8.(2) prescribes that in the case of designated sectors, organs of state must advertise such tenders with the specific bidding condition that only locally produced or manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3. Where necessary, for tenders referred to in paragraph 1.2 above, a two stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.
- 1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

$$LC = [1 - x / y] * 100$$

Where

- x is the imported content in Rand
y is the bid price in Rand excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the bid as indicated in paragraph 4.1 below.

The SABS approved technical specification number SATS 1286:2011 is accessible on [http://www.thedti.gov.za/industrial development/ip.jsp](http://www.thedti.gov.za/industrial%20development/ip.jsp) at no cost.

- 1.6. A bid may be disqualified if this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of the bid documentation;
- 2. The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid is/are as follows:**

Description of services, works or goods Stipulated minimum threshold

3. Does any portion of the goods or services offered have any imported content?
(Tick applicable box)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

- 3.1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency at 12:00 on the date of advertisement of the bid.

The relevant rates of exchange information is accessible on www.reservebank.co.za

Indicate the rate(s) of exchange against the appropriate currency in the table below (refer to Annex A of SATS 1286:2011):

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

NB: Bidders must submit proof of the SARB rate (s) of exchange used.

3. Where, after the award of a bid, challenges are experienced in meeting the stipulated minimum threshold for local content the dti must be informed accordingly in order for the dti to verify and in consultation with the AO/AA provide directives in this regard.

LOCAL CONTENT DECLARATION
(REFER TO ANNEX B OF SATS 1286:2011)

LOCAL CONTENT DECLARATION BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY (CLOSE CORPORATION, PARTNERSHIP OR INDIVIDUAL)

IN RESPECT OF BID NO.

ISSUED BY: (Procurement Authority / Name of Institution):

NB

- 1 The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.
- 2 Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on [http://www.thdti.gov.za/industrial development/ip.jsp](http://www.thdti.gov.za/industrial%20development/ip.jsp). Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below.** Declarations D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

I, the undersigned, (full names),
 do hereby declare, in my capacity as
 of(name of bidder
 entity), the following:

- (a) The facts contained herein are within my own personal knowledge.
- (b) I have satisfied myself that:
 - (i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011; and
- (c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C:

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R

Stipulated minimum threshold for local content (paragraph 3 above)	
Local content %, as calculated in terms of SATS 1286:2011	

If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above. The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E.

- (d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2011.
- (e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Institution imposing any or all of the remedies as provided for in Regulation 14 of the Preferential Procurement Regulations, 2017 promulgated under the Preferential Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE: _____

DATE: _____

WITNESS No. 1 _____

DATE: _____

WITNESS No. 2 _____

DATE: _____



Form B1 to Form B5: Certificates

Attach the following Certificates to this page:

- B1: Proof of registration for Contractor's WCA registration or COID**
- B2: An original Certificate of Contractor Registration issued by the Construction Industry Development Board (CIDB)**
- B3: An original or certified Tax Clearance Certificate issued by the South African Revenue Services. In the event of a Joint Venture, each member shall comply with this requirement.**
- B4: An original Bank Statement of good financial standing. (This document shall include a Bank Rating for the tender sum as indicated below)**
- B5: Central Supplier Database (CSD) proof of registration with Supplier number (MAAA) and Unique registration number**

Bank Report on : *(Tenderers Name)*
 Account No :
 Bank :
 Branch Code :
 Amount : *(Tender Value)*
 Duration : *XX months (excluding special non-working days)*

BUSINESS POTENTIAL CODE (MARK X AGAINST APPLICABLE CLASSIFICATION)

- A UNDOUBTED FOR INQUIRY
- B GOOD FOR AMOUNT QUOTED
- C GOOD FOR AMOUNT QUOTED IF STRICTLY IN WAY OF BUSINESS
- D FAIR TRADE RISK
- E FIGURE CONSIDER TOO HIGH
- F FINANCIAL POSITION UNKNOWN
- G OCCASIONALLY DISHONOURED
- H FREQUENTLY DISHONOURED

Form C1: Compulsory Enterprise Questionnaire

The following particulars must be furnished. In the case of a joint venture, separate enterprise questionnaires in respect of each partner must be completed and submitted.

Section 1: Name of enterprise:

Section 2: VAT registration number, if any:

Section 3: CIDB registration number, if any:

Section 4: CSD number:

Section 5: Particulars of sole proprietors and partners in partnerships:

** Complete only if sole proprietor or partnership and attach separate page if more than 3 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: SBD 6 issued by National Treasury must be completed for each tender and be attached as a tender requirement.

Section 9: SBD8 issued by National Treasury must be completed for each tender and be attached as a tender requirement.

Section 10: SBD9 issued by National Treasury must be completed for each tender and be attached as a tender requirement.

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 the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; 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	
<i>Enterprise name</i>			

Form C5: Installation and Test Equipment

The following are lists of major items of relevant equipment that I/we presently own or lease and will have available for this contract or will acquire or hire for this contract if my/our tender is accepted.

(a) Details of major equipment that is owned by and immediately available for this contract. (Bakkies, Trailers, Cable Jack, Thumpers, Pressure Testers, Rigging Equipment's ,Cable Fault Locators)

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

(b) Details of major equipment that will be hired or acquired for this contract if my/our tender is acceptable.

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

Signed		Date	
Name		Position	
Tenderer			

FORM C6: A certified copy of B-BBEE Verification Certificate

1. Valuation of preference points is based on tenderer's B-BBEE verification certificate:
 - a) The certificate shall have been issued by:
 - i. A verification agency accredited by South African National Accreditation System (SANAS);
 - ii. A registered auditor approved by the Independent Regulatory Board of Auditors (IRBA);
 - b) The verification certificate must be valid at the tender closing date
 - c) Failure to submit a valid verification certificate will result in the award of zero (0) points for preference.

2. In the event of a Joint Venture (JV), a consolidated B-BBEE verification certificate in the name of the JV shall be submitted.
 - a) The verification certificate shall identify:
 - i. The name and *domicilium citandi et executandi* of the tenderer
 - ii. The registration and VAT number of the tenderer
 - iii. The dates of granting of the B-BBEE score and the period of validity
 - iv. The expiry date of the verification certificate
 - v. A unique identification number

3. The standard and/or normative document, including the issue and/or revision used to evaluate the tenderer:
 - a) The name and/or mark/logo of the B-BBEE verification agency.
 - b) The scorecard (GENERIC, QSE, EME) against which the tenderer has been verified.
 - c) The B-BBEE status level
 - d) The SANAS or IRBA logo on the verification certificate.
 - e) The B-BBEE procurement recognition level.
 - f) The score achieved per B-BBEE element.
 - g) The % black shareholding.
 - h) The % black woman shareholding.
 - i) The % black persons with disabilities.

4. ACSA will not be responsible to acquire data that it needs for its own reporting systems and which may not form part of a verification agency's standard certificate format. The tenderer, at its own cost, must acquire the specified data listed in 3 above from its selected verification agency and have it recorded on the certificate.

Alternatively, such missing data must be supplied separately, but certified as correct by the same verification agency and also submitted. Failure to abide by this requirement will result in such a tenderer scoring zero (0) preference.

Signed		Date	
Name		Position	
Tenderer			



FORM C7. The CV's of key personnel

Bidders are referred to **clause C.3.11** which indicates the maximum possible score for information requested under this schedule.

Bidders are required to demonstrate the following:

- **Composition of team structure** including roles & responsibilities and time allocation (i.e. full time vs part time)
- Qualifications and Demonstrated Experience of key personnel in relevant projects (similar size, nature & complexity). a technically complex nature, it is essential that suitably qualified and experienced personnel be assigned to this project.

As a minimum key team members as stated below need to be allocated to the project serving in a full time capacity covering the following key competencies. (i.e. 1 competency per team member). The key team needs to be represented need to be full time on the site):

1. **Site Manager**
2. **Electrician**
3. **Safety Officer**

The evaluation of quality will be based on the **CV's submitted and organogram of proposed team.**

Bidders are to complete returnable CV templates and attach full detailed CV thereto



Schedule of Key Personnel's Details

Site Manager

Make as many copies of this page as required

Complete the schedule below for the person that will be involved in the contract. **ATTACH CV AND PROOF OF QUALIFICATION OR CERTIFICATES.**

1. KEY PERSONNEL EXPERIENCE						
Previous experience: List only the 5 most recent completed projects that the Tenderer considers relevant to the specified scope of works:						
Detailed Project / Contract Description	Client Details	Client Reference		Project Value	Duration	
		Contact person	Contact Number	(R Million)	Start	Completion
Signed on Behalf of Tenderer				Date		
Name				Position		

The schedule must be signed to Confirm that the information provided above is correct.



Site Manager

A schedule needs to be completed for each key staff member that will be involved in the contract as per functionality criteria.

Surname:	
Name:	
Position:	
Nationality:	
Date of Birth:	
Highest Qualification:	
Other Qualification	
Other Qualification	
Relevant Experience	
Other Experience	



Schedule of Key Personnel's Details

Electrician

Make as many copies of this page as required

Complete the schedule below for the person that will be involved in the contract. **ATTACH CV AND PROOF OF QUALIFICATION OR CERTIFICATES.**

2. KEY PERSONNEL EXPERIENCE						
Previous experience: List only the 5 most recent completed projects that the Tenderer considers relevant to the specified scope of works:						
Detailed Maintenance Contract Description / Contract Number	Client Details	Client Reference		Project Value (R Million)	Duration (YY-MM-DD)	
		Contact person	Contact Number		Start	Completion
Signed on Behalf of Tenderer				Date		
Name				Position		

The schedule must be signed to confirm that the information provided above is correct.

O.R. TAMBO INTERNATIONAL AIRPORT

Electrician

A schedule needs to be completed for each key staff member that will be involved in the contract as per functionality criteria.

Surname:	
Name:	
Position:	
Nationality:	
Date of Birth:	
Highest Qualification:	
Other Qualification	
Other Qualification	
Relevant Experience	
Other Experience	

Schedule of Key Personnel's Details

Safety Officer

Make as many copies of this page as required

Complete the schedule below for the person that will be involved in the contract. **ATTACH CV AND PROOF OF QUALIFICATION OR CERTIFICATES.**

2. KEY PERSONNEL EXPERIENCE						
Previous experience: List only the 5 most recent completed projects that the Tenderer considers relevant to the specified scope of works:						
Detailed Maintenance Contract Description / Contract Number	Client Details	Client Reference		Project Value (R Million)	Duration (YY-MM-DD)	
		Contact person	Contact Number		Start	Completion
Signed on Behalf of Tenderer				Date		
Name				Position		

The schedule must be signed to confirm that the information provided above is correct.

Safety Officer

A schedule needs to be completed for each key staff member that will be involved in the contract as per functionality criteria.

Surname:	
Name:	
Position:	
Nationality:	
Date of Birth:	
Highest Qualification:	
Other Qualification	
Other Qualification	
Relevant Experience	
Other	



FORM C8: Certified Certificates of Qualifications of Key Personnel.

Please attach certified copies of Qualifications of Key Personnel as listed under Form C7 above to this page.

Signed		Date	
Name		Position	
Tenderer			

Form C10. Occupational Health and Safety Questionnaire

1.	SHE POLICY, ORGANISATION AND MANAGEMENT INVOLVEMENT	YES	NO
1.1	Do you have a SHE Policy?		
	Is this signed by the senior executive?		
	Please supply copy of this policy		
1.2	Does a She structure exist in your company?		
	Please provide details		
1.3	Are senior and middle management actively involved in the promotions of SHE?		
	Please provide details e.g.		
	<ul style="list-style-type: none"> • Periodical work area inspection • Regular Health and Safety meetings with personnel 		
1.4	Are the SHE responsibilities of managers clearly defined?		
	Please provide details		
1.5	Are annual SHE objectives included in your business plan?		
	Please provide example		
1.6	Is your company registered with the Compensation Commissioner? (COID Act)?		
	If so, please provide registration number		
1.7	Do you have a copy of good standing certificate, confirming that your registration is paid up?		
	If so, please provide copy thereof		
2.	SHE TRAINING	YES	NO
2.1	Is training provided to employees at the following stages?		
	<ul style="list-style-type: none"> • When joining the company • When changing jobs within the company • When new plant or equipment needs to be operated 		
	As a result of experience of and feedback from an accident/ incident reports		
	Are you able to provide proof of specialist training provided?		
	Please state how this can be achieved		
2.2	What formal SHE training is provided specifically to		
	<ul style="list-style-type: none"> • First line supervisors 		
	Middle and top management		
	Please describe		
2.3	Are all employees (including sub-contractors) instructed as to the application of rules and regulations?		
	When is this done and how is it achieved?		

2.4	Does this training include the selection, use and care of personal protective equipment?				
2.5	What refresher training is provided and at what intervals?				
	Please list examples				
	Course Title	Target audience	Interval		
2.6	Has the person(s) allocated as your SHE advisor followed specific SHE training?				
	Please list most recent courses				
	Does this include refresher training?				
3.	PURCHASE OF GOODS, MATERIALS AND SERVICES			YES	NO
3.1	Do you have a system for establishing SHE specifications as part of the assessment of goods, materials and services?				
	Please describe				
3.2	Do you have a system which ensures that all statutory inspection of plant and equipment are carried out?				
	Please give examples of plant /equipment covered				
3.3	Is there record of inspection?				
	Where is it kept?				
	Are you able to supply copies of these inspection records if required?				
3.4	How is plant and equipment, which has been inspected identifies as being safe to use?				
3.5	Do you evaluate the SHE competence of all sub-contractors?				
	Please describe how this is achieved and how the results are monitored				
4.	SHE INSPECTIONS			YES	NO
4.1	Are periodic work inspections carried out by first line supervisors or your General Safety Regulation 11(1) appointee?				
4.2	Are records of these inspections kept and available?				
4.3	During the inspections are supervisors required to check that safety rules and regulations (including personal protective equipment) are adhered to?				
4.4	Are unsafe acts and conditions reported and remedial actions formally monitored?				
	Please provide examples of the above				
5.	RULES AND REGULATIONS			YES	NO
5.1	Do health and safety rules and regulations exist for personnel and sub-contractors?				

	Do these cover		
	<ul style="list-style-type: none"> • General rules 		
	<ul style="list-style-type: none"> • Project rules 		
	<ul style="list-style-type: none"> • Specific task rules 		
5.2	Do these rules include permit to work system (as applicable)		
5.3	Do you have experience of project SHE plans? Please give examples of where these have been used		
5.4	Do you have a formal company guideline for holding pre-contract health and safety meetings with the client?		
6	RISK MANAGEMENT	YES	NO
6.1	Have the following, involved in the execution of your work, been identified? <ul style="list-style-type: none"> • Hazards affecting health and safety? • The groups of people who might be affected? • An evaluation of the risk from each significant hazard? • Whether the risks arising are adequately controlled? 		
6.2	Are these findings and assessments recorded?		
6.3	How often are they reviewed? Please list the time frame e.g. years		
6.4	For what processes/risk is personal protective equipment issued?		
	Process/Risk	Type of PPE	
	Do you have a copy of the issue lists for PPE available on request?		
7	EMERGENCY ARRANGEMENTS	YES	NO
7.1	How do you manage your arrangements for dealing with emergencies? Are these communicated to your sub-contractors?		
7.2	What provision have you made for first aid? E.g. Trained First Aiders		
7.3	What training do you provide to employees in Safety/Fire Fighting? Please list institutions used for these training		
8	RECRUITMENT OF PERSONNEL	YES	NO
8.1	Are health and Safety factors considered when hiring personnel?		
8.2	Are medical examinations carried prior to employment?		
	In all cases		

	Where type of work requires medical examination		
8.3	Do you cover exit medical examination?		
8.4	How do you assess the competence of staff before an appointment is made? E.g. Via trade testing, reference checks		
9.	REPORTING AND INVESTIGATION OF ACCIDENTS, INCIDENTS AND DANGEROUS CONDITIONS	YES	NO
9.1	Do you have a procedure for reporting, investigating and recording accidents and incidents? Please supply a copy		
9.2	Is there a standard report/investigation form used? Please supply a copy		
9.3	Do you have a formal system for reporting situations/near misses etc.? Please provide a copy		
9.4	Please provide the following statistic for the last five years		
		YEAR 1	YEAR 2
		YEAR 3	YEAR 4
		YEAR 5	
	Lost time accidents per 100 employees		
	Major/ Reportable injuries per 100 employees		
	Number of dangerous occurrences		
	Lost man day due to accidents		
10	HEALTH AND SAFETY COMMUNICATION AND CONSULTATION	YES	NO
10.1	Are Health and Safety Committee meetings held between management and appointed Health and Safety representatives?		
10.2	Are the results of these meetings communicated to all employees? If Yes please describe method		
10.3	Are Health and Safety meetings held? At what frequency? Chaired by whom?		
10.4	Do you carry out SHE promotions / campaigns? If Yes please provide examples		

The following documentation should also be provided with the tender:

1. Letter of Good Standing from the Compensation Commissioner or licensed compensation insurer
2. COID Insurance



Declaration

I/wedeclare that the above information provided is correct.

Signed		Date	
Name		Position	
Tenderer			



Form C11: Schedule of Information to be provided by Tenderer

1. Company details:

Registered Address:
 Contact Person:
 Telephone:
 Fax:

2. Shareholders

Names/Percentages of holdings:

3. Bankers

Name of Account Holder :
 Bank:
 Branch:
 Account Number:
 Bank and branch contact details:

4. Turnover

Approximate turnover for each of the past three years:

2019:

2020:

2021:

5. Management and Manpower Resources

Supervisors:

Labourers:

Other:

Name of Supervisor to be allocated to this contract:

6. Construction Equipment (Value in R)

Equipment owned by Company:

Own workshop/stores (location):

Signed		Date	
Name		Position	
Tenderer			

Form C12: Proposed Amendments and Qualifications

The Tenderer should record any deviations or qualifications he may wish to make to the tender documents in this Returnable Schedule. Alternatively, a tenderer may state such deviations and qualifications in a covering letter to his tender and reference such letter in this schedule.

The Tenderer's attention is drawn to clause C.3.8 of the Standard Conditions of Tender referenced in the Tender Data regarding the employer's handling of material deviations and qualifications.

Page	Clause item	or	Proposal

Signed		Date	
Name		Position	
Tenderer			



Form C13: CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT

between

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED

(Registration No. 1993/004149/30)

("Airports Company")

of

Riverwoods Office Park

24 Johnson Road

Bedfordview

Johannesburg

AND

[NAME OF SERVICE PROVIDER]

(Registration No: _____)

("_____")

of

[Service Providers Address]



1. INTERPRETATION

In this agreement -

- 1.1 "confidential Information" – is information which is confidential to the disclosing party, and includes whether in written, graphic, oral, proprietary, tangible, intangible, electronic or other form, and, -
- 1.1.1 any information in respect of know-how, formulae, statistics, processes, systems, business methods, marketing, trading and merchandising methods and information, promotional and advertising plans and strategies, pricing, financial plans and models, inventions, long-term plans, research and development data, user or consumer/ customer data and profiles, ideas, computer programmes, drawings and any other information of an confidential nature of the disclosing party, in whatever form it may be;
 - 1.1.2 the contractual business and financial arrangements of the disclosing party and others with whom it has business arrangements of whatever nature;
 - 1.1.3 all information peculiar to the business of the disclosing party which is not readily available to a competitor of the disclosing party in the ordinary course of business;
 - 1.1.4 the fact of and content of any discussions between the disclosing party and the receiving party as well as the existence and content of any agreement, which may be concluded between the disclosing party and the receiving party;
 - 1.1.5 all other matters of a confidential nature which relate to the disclosing party's business;
 - 1.1.6 generally, information which is disclosed in circumstances of confidence or would be understood by the parties, exercising reasonable business judgement, to be confidential;
 - 1.1.7 all information of whatsoever nature relating to the disclosing party as contemplated in 2.1 below;

but does not include information which -
 - 1.1.8 is or hereafter becomes part of the public domain, otherwise than as a result of a breach or default of the receiving party or of a representative or affiliate of the receiving party;
 - 1.1.9 can be shown to have been lawfully in the possession of the receiving party or its affiliates or consultants prior to its disclosure and is not subject to an existing agreement between the disclosing party and the receiving party;



- 1.1.10 is acquired by the receiving party independently from a third party who lawfully acquired such information without restriction and who had not previously obtained the confidential information directly or indirectly under a confidentiality obligation from the disclosing party;
- 1.1.11 is acquired or developed by the receiving party independently of the disclosing party and in circumstances which do not amount to a breach of the provisions of this agreement;
- 1.1.12 is disclosed or released by the receiving party to satisfy an order of a court of competent jurisdiction or to otherwise comply with the provisions of any law or regulation in force at the time or the requirements of any recognised stock exchange; provided that, in these circumstances, the receiving party shall inform the disclosing party of the requirement to disclose prior to making the disclosure and provided further that the receiving party will disclose only that portion of the confidential information which it is legally required to so disclose; and the receiving party will use its reasonable endeavours to protect the confidentiality of such information to the widest extent lawfully possible in the circumstances (and shall co-operate with the disclosing party if it elects to contest any such disclosure);
- 1.2 For the purposes of this agreement the party, which discloses confidential information, shall be referred to as “the disclosing party” and the party, which receives the confidential information, shall be referred to as “the receiving party”.
- 1.3 ““affiliate” –of a Party means any person, now or hereafter existing, who directly or indirectly controls, (*holding company*) or is controlled or is under common control of such Party (subsidiary company); a Person “controls” another person if it holds or is beneficially entitled to hold , directly or indirectly, other than by way of security interest only, more than 50% of its voting , income or capital;
- 1.4 “disclosing party” – the party disclosing confidential information in terms of this agreement and being Airports Company;
- 1.5 “receiving party” – the party receiving confidential information in terms of this agreement;
- 1.6 “the parties” – the Airports Company and _____.

2. **INTRODUCTION**

- 2.1 The parties intend to provide each other with certain information pertaining to their operations and the parties are in the process of discussing certain matters with a view to concluding an agreement (“the

potential agreement"), which discussions have required and will require the disclosure to one another of information of a proprietary, secret and confidential nature. Whether or not the parties conclude the potential agreement will not affect the validity of this agreement.

2.2 If the confidential information so disclosed is used by the receiving party for any purpose other than that for which its use is authorised in terms of this agreement or is disclosed or disseminated by the receiving party to another person or entity which is not a party to this agreement, this may cause the disclosing party to suffer damages and material financial loss.

2.3 This agreement shall also bind the parties, notwithstanding the date of signature hereof, in the event that either party shall have disclosed any confidential information to the other party prior to date of signature hereof.

2.4 The parties wish to record the terms and conditions upon which each shall disclose confidential information to the other, which terms and conditions shall constitute a binding and enforceable agreement between the parties and their agents.

3. **USE OF CONFIDENTIAL INFORMATION**

Any confidential information disclosed by the disclosing party shall be received and used by the receiving party only for the limited purpose described in 2.1 above and for no other purpose.

4. **NON-DISCLOSURE**

4.1 THE RECEIVING PARTY undertakes that -

4.1.1 it will treat the disclosing party's confidential information as private and confidential and safeguard it accordingly;

4.1.2 it will not use (except as permitted in 3 above) or disclose or release or copy or reproduce or publish or circulate or reverse or engineer and/or decompile or otherwise transfer, whether directly or indirectly, the confidential information of the disclosing party to any other person or entity; and the receiving party shall take all such steps as may be reasonably necessary to prevent the disclosing party's confidential information falling into the hands of unauthorised persons or entities;

4.1.3 it shall not disclose the confidential information of the disclosing party to any employee, consultant, professional adviser, contractor or sub-contractor or agent of the receiving party (collectively referred to herein as "representative")



or an affiliate of the receiving party, nor shall they be given access thereto by the receiving party -

4.1.3.1 unless it is strictly necessary for the purposes referred to in 2.1 above; and

4.1.3.2 the receiving party shall have procured that the representative, affiliate or consultant to whom or to which such information is disclosed or made available shall have agreed to be bound by all the terms of this agreement,

and, in such event, the receiving party hereby indemnifies the disclosing party against any loss, harm or damage which it may suffer as a result of the unauthorised disclosure of confidential information by a representative, affiliate or consultant.

4.2 Any documentation or written record or other material containing confidential information (in whatsoever form) which comes into the possession of the receiving party shall itself be deemed to form part of the confidential information of the disclosing party. The receiving party shall, on request, and in any event if the discussions referred to in 2.1 above should not result in an agreement, return to the disclosing party all of its confidential information which is in physical form (including all copies) and shall destroy any other records (including, without limitation, those in machine readable form) as far as they contain the disclosing party's confidential information. The receiving party will, upon written or oral request from the disclosing party and within five (5) business days of the disclosing party's request, provide the disclosing party with written confirmation that all such records have been destroyed.

5. **COPIES**

5.1 **The receiving party may only make such copies of the disclosing party's confidential information as are strictly necessary for the purpose and the disclosures which are not in**

breach of this agreement and authorised in terms of this agreement. The receiving party shall clearly mark all such copies as “Confidential”.

5.2 At the written request of the disclosing party, the receiving party shall supply to the disclosing party a list showing, to the extent practical –

5.2.1 where copies of the confidential Information are held;

5.2.2 copies that have been made by the receiving party (except where they contain insignificant extracts from or references to confidential information) and where they are held; and

5.2.3 the names and addresses of the persons to whom confidential information has been disclosed and, if applicable, a copy of the confidentiality undertaking signed by such persons complying with the provisions of this agreement.

6. THE USE OF THE COMPANY'S INTELLECTUAL PROPERTY

6.1 The receiving party shall not use any intellectual property of the Company (including trademarks, service marks, logos, slogans, trade names, brand names and other indicia of origin) (collectively, the “**Company IP**”) for any reason whatsoever without first obtaining the Company’s prior written consent which consent the Company shall be entitled to grant solely at its own discretion.

6.2 If the receiving party requires the use of such Company IP, a request must be sent to the Brand Custodians Office, via email to brandcustodian@airports.co.za. Each single request by the same receiving party shall be treated as a new request.

6.3 Should the Company provide its consent in terms of clause 6.1 above, the receiving party shall comply with the Company’s policies and standards with regard to the use of the Company IP. Such policies and standards shall be communicated to the receiving party at the time the Company grants the consent to the receiving party.

6.4 Failure to adhere to the provisions of this clause 6 or the policies, brand requirements and protocols that will be communicated by the Brand Custodians Office to the receiving party, shall result in the penalty equal to the value of 2% (two per cent) of the receiving party’s annual turnover in the financial year in which the aforesaid failure occurred.



7. **DURATION**

7.1 Subject to Clause 2.3 this agreement shall commence or shall be deemed to have commenced on the date of signature of this agreement by the last party to sign the agreement.

7.2 This agreement shall remain in force for a period of **5** years (“the term”), or for a period of one (1) year from the date of the last disclosure of confidential information to the receiving party, whichever is the longer period, whether or not the parties continue to have any relationship for that period of time.

8. **TITLE**

8.1 All confidential information disclosed by the disclosing party to the receiving party is acknowledged by the receiving party:

8.1.1 to be proprietary to the disclosing party; and

8.1.2 not to confer any rights to the receiving party of whatever nature in the confidential information.

9. **RELATIONSHIP BETWEEN THE PARTIES**

9.1 The disclosing party is not obliged, by reason of this agreement, to disclose any of its confidential information to the receiving party or to enter into any further agreement or business relationship with the receiving party. Nothing herein shall imply or create any exclusive relationship between the Parties or otherwise restrict either Party from pursuing any business opportunities provided it complies at all times with the non-disclosure obligations set forth herein

9.2 The disclosing party retains the sole and exclusive ownership of intellectual property rights to its confidential information and no license or any other interest in such confidential information is granted in terms hereof or by reason of its disclosure.

9.3 The termination of the discussions referred to in 2.1 above shall not release the parties from the obligations set out in this agreement.

10. **ENFORCEMENT, GOVERNING LAWS AND JURISDICTION**

10.1 This agreement shall be governed by and interpreted according to the laws of the Republic of South Africa, without reference to the choice of laws' provisions of the Republic of South Africa. In the event of a conflict between or inconsistency in the laws applicable in the various provinces of the Republic of South Africa, the law as applied and interpreted in the Gauteng Province shall prevail.

- 10.2 The parties irrevocably submit to the exclusive jurisdiction of the High Court of South Africa, Witwatersrand Local Division, in respect of any action or proceeding arising from this agreement.
- 10.3 The parties agree that, in the event of a breach of this agreement, monetary damages would not be an adequate remedy. In the event of a breach or threatened breach of any provisions of this agreement by the receiving party, the disclosing party (and/or its relevant affiliate) shall be entitled to injunctive relief in any court of competent jurisdiction and the receiving party shall reimburse the disclosing party for any costs, claims, demands or liabilities arising directly or indirectly out of a breach. Nothing contained in this agreement shall be construed as prohibiting a party or its affiliate from pursuing any other remedies available to it for a breach or threatened breach.
- 10.4 The failure by the disclosing party to enforce or to require the performance at any time of any of the provisions of this agreement shall not be construed to be a waiver of such provision, and shall not affect either the validity of this agreement or any part hereof or the right of the disclosing party to enforce the provisions of this agreement.

11. **DOMICILIUM**

- 11.1 The parties choose as their *domicilium* the addresses indicated in the heading to this agreement for the purposes of giving any notice, the payment of any sum, the serving of any process and for any other purpose arising from this agreement.
- 11.2 Each of the parties shall be entitled from time to time, by written notice to the other, to vary its domicilium to any other address which is not a post office box or poste restante.
- 11.3 Any notice required or permitted to be given in terms of this agreement shall be valid and effective only if in writing.
- 11.4 Any notice given and any payment made by one party to the other ("the addressee") which:
- 11.4.1 is delivered by hand during the normal business hours of the addressee at the addressee's domicilium for the time being shall be presumed, until the contrary is proved, to have been received by the addressee at the time of delivery;
 - 11.4.2 is posted by prepaid registered post from an address within the Republic of South Africa to the addressee at the addressee's domicilium for the time being shall be presumed, until the contrary is proved, to have been received by the addressee on the fourth day after the date of posting;
 - 11.4.3 is transmitted by facsimile to the addressee's receiving machine shall be presumed, until the contrary is proved, to have been received within one (1) hour of transmission where



it is transmitted during normal business hours or, if transmitted outside normal business hours, within one (1) hour of the resumption of normal business hours on the next normal business day.

12. **GENERAL**

- 12.1 No party shall be bound by any representation, warranty, undertaking, promise or the like not recorded in this agreement.
- 12.2 No addition to, variation or agreed cancellation of this agreement shall be of any force or effect unless in writing and signed by or on behalf of the parties.
- 12.3 Any indulgence which either party may show to the other in terms of or pursuant to the provisions contained in this agreement shall not constitute a waiver of any of the rights of the party which granted such indulgence.
- 12.4 The parties acknowledge that this agreement and the undertakings given by it in terms hereof are fair and reasonable in regard to their nature, extent and period and go no further than is reasonably necessary to protect the interests of the parties.
- 12.5 The parties hereby confirm that they have entered into this agreement with full and clear understanding of the nature, significance and effect thereof and freely and voluntarily and without duress.
- 12.6 Neither party shall have the right to assign or otherwise transfer any of its rights or obligations under this agreement.
- 12.7 This agreement may be executed in several counterparts that together shall constitute one and the same instrument.
- 12.8 In this agreement, clause headings are for convenience and shall not be used in its interpretation.
- 12.9 Each clause of this agreement is severable, the one from the other and if any one or more clauses are found to be invalid or unenforceable, that clause shall not affect the balance of the clauses which shall remain in full force and effect.

SIGNED at _____ on _____ day of _____ 20

AIRPORTS COMPANY SOUTH AFRICA SOC
LIMITED



the signatory warranting that he is duly authorised thereto.

Name: _____

Designation: _____

AS WITNESSES

1. _____

2. _____

SIGNED at _____ on _____ day of _____ 20

[NAME OF SERVICE PROVIDER]

the signatory warranting that s/he is duly authorised thereto.

Name: _____

Designation: _____

AS WITNESSES

1. _____

2. _____



C1.1 Form of Offer and Acceptance

Offer

The employer, identified in the acceptance signature block, wishes to enter into a contract for the

The Substation 2B Low Voltage Switchgear Replacement at the O.R. Tambo International Airport for 12 months

The Contractor, identified in the offer signature block, has examined this document and addenda hereto as listed in the schedules, and by submitting this offer has accepted the conditions thereof.

By the representative of the Contractor, deemed to be duly authorised, signing this part of this form of offer and acceptance, the Contractor offers to perform all 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 exclusive of VAT is	R
Value Added Tax @ 15% is	R
The total offered amount due inclusive of VAT is	R
(in words)	

(The above amount should be calculated as per the guide provided in the Pricing Data [Subtotal F]. In the event of any conflict between the amount above and the Pricing Data [Subtotal F], the former shall prevail.)

for the Contractor

Signature Date

Name Capacity

(Name and address of organisation)

Name and signature of witness signature

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 Bidder before the end of the period of validity stated in the tender data, whereupon the Bidder becomes the party named as the Contractor in the conditions of contract identified in the contract data.



Acceptance

By signing this part of this form of offer and acceptance, the employer identified below accepts the Contractor'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 Contractor's offer shall form an agreement between the employer and the Contractor upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

- Part C1: Agreements and contract data, (which includes this agreement)
- Part C2: Pricing data and Price List
- Part C3: Service information.
- Part C4: Site information
and schedules, drawings and documents or parts thereof where so indicated.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the tender schedules as well as any changes to the terms of the offer agreed by the Bidder and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless contained in this schedule.

The Contractor shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data. Failure to 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 Bidder receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the Bidder (now Contractor) within five working days of the date of such receipt notifies the employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

for the Employer

Signature Date

Name Capacity

**Airports Company South Africa,
3rd Floor ACSA North Wing Offices
O R Tambo International Airport
Kempton Park
1627**

Name of witness signature



Schedule of Deviations

- 1 Subject
- Details
-
-
-
- 2 Subject
- Details
-
-
-
- 3 Subject
- Details
-
-
-
- 4 Subject
- Details
-
-
- 5 Subject
- Details
-
-

By the duly authorised representatives signing this agreement, the employer and the Contractor agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the tender schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the Bidder 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 Bidder of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this agreement.

C1.2 ECC3 Contract Data

Part one - Data provided by the *Employer*

Clause	Statement	Data
1	General	
	<p>The <i>conditions of contract</i> are the core clauses and the clauses for main Option</p> <p>dispute resolution Option and secondary Options</p> <p>of the NEC3 Engineering and Construction Contract, June 2005 (ECC3) (with amendments June 2006)</p>	<p>B: Priced contract with bill of quantities</p> <p>W1: Dispute resolution procedure</p> <p>X1: Price adjustment for inflation</p> <p>X7: Delay damages</p> <p>X13: Performance Bond</p> <p>X18: Limitation of liability</p> <p>Z: <i>Additional conditions of contract</i></p>
10.1	<p>The <i>Employer</i> is (Name):</p> <p>Address</p>	<p>Airports Company South Africa SOC Ltd. (Reg no: 1993/004149/30), a juristic person incorporated in terms of the company laws of the Republic of South Africa</p> <p>Registered office at OR Tambo International Airport</p>
10.1	The <i>Project Manager</i> is: (Name)	



Address **Aiports Company South Africa
O R Tambo International Airport
ACSA Admin. Building
3rd Floor North Wing Offices
Kempton Park
1627**

Tel

Fax

e-mail

10.1	The <i>Supervisor</i> is: (Name)	
	Address	Aiports Company South Africa O R Tambo International Airport ACSA Admin. Building 3rd Floor North Wing Offices Kempton Park 1627
	Tel No.	
	Fax No.	
	e-mail	
11.2(13)	The <i>works</i> are	The Substation 2B Low Voltage Switchgear Replacement at the O.R. Tambo International Airport
11.2(14)	The following matters will be included in the Risk Register	1. Project delays – contract signing, material delivery, access to substation
11.2(15)	The <i>boundaries of the site</i> are	OR Tambo International Airport
11.2(16)	The Site Information is in	Part 4: Site Information
11.2(19)	The Works Information is in	Part 3: Scope of Work and all documents and drawings to which it makes reference.
12.2	The <i>law of the contract</i> is the law of	the Republic of South Africa
13.1	The <i>language of this contract</i> is	English
13.3	The <i>period for reply</i> is	1 week

2 The Contractor's main responsibilities

Data required by this section of the core clauses is provided by the *Contractor* in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data.

3 Time

11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is	To be confirmed but intended is 30 November 2023	
30.1	The <i>access dates</i> are:	Part of the Site	Date
		1 Airfield	24Hours 7days a week
31.1	The <i>Contractor</i> is to submit a first programme for acceptance within	2 weeks of the Contract Date.	
31.2	The <i>starting date</i> is	The Contract Date (11.2(4)) Date of signature of ACSA representative.	
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	2 weeks.	

4 Testing and Defects

42.2	The <i>defects date</i> is	52 weeks after Completion of the whole of the <i>works</i>.
43.2	The <i>defect correction period</i> is	4 weeks

5 Payment

50.1	The <i>assessment interval</i> is	between the 20th day of each successive month and the end of the month
51.1	The <i>currency of this contract</i> is the	South African Rand.
51.2	The period within which payments are made is	30 days from date of invoice.
51.4	The <i>interest rate</i> is	(i) 0.5 percent above the publicly quoted prime rate of interest (calculated on a 365-day year) charged from time to time by South Africa's four largest Banks and

84.1	The <i>Employer</i> provides these insurances from the Insurance Table	Contract Work Insurance, Public Indemnity, Professional Indemnity and SASRIA. The terms and other matters applicable to these insurances provided by the Employer (and to insurances generally) are detailed in the insurance schedule attached as section C1.4 to the contract (“the insurance Schedule)
84.1	The <i>Employer</i> provides these additional insurances	The terms and other matters applicable to these insurances provided by the Employer (and to insurances generally) are detailed in the insurance schedule attached as section C1.4 to the contract (“the insurance Schedule)
84.2	The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the <i>works</i> , Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the <i>Contractor</i>) caused by activity in connection with this contract for any one event is	As stated in C1.4
84.2	The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract for any one event is	As stated in C1.4
9	Termination	There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.
10	Data for main Option clause	
B	Priced contract with bill of quantities	

60.6	The <i>method of measurement</i> is	The 6 th edition of the Standard System of measuring Building Works published by Association of South African Quantity Surveyors and amended as stated in Part C2.1, Pricing Assumptions .
11 Data for Option W1		
W1.1	The <i>Adjudicator</i> is (Name)	the person selected from the ICE-SA Panel of Adjudicators listed in www.ice-sa.org.za by the Party intending to refer a dispute to him.
W1.2(3)	The <i>Adjudicator nominating body</i> is:	the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the London Institution of Civil Engineers. (See www.ice-sa.org.za) or its successor body.
W1.4(2)	The <i>tribunal</i> is:	arbitration.
W1.4(5)	<p>The <i>arbitration procedure</i> is</p> <p>The place where arbitration is to be held is</p> <p>The person or organisation who will choose an arbitrator</p> <ul style="list-style-type: none"> - if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is 	<p>the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.</p> <p>Kempton Park, South Africa</p> <p>the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.</p>
12 Data for secondary Option clauses		
X1 Price adjustment for inflation		
X1.1(a)	The <i>base date</i> for indices is	Contract date (11.2(4)) and this index refer to the CPI Index on the starting date of the contract. Price adjustment for inflation shall only take place on contract anniversary.

X1.1(c)	The proportions used to calculate the Price Adjustment Factor are:			
		proportion	linked to index for	
			Index prepared by	
		0. [•]	[•]	[•]
		0. [•]	[•]	[•]
		0. [•]	[•]	[•]
		0. [•]	[•]	
		0. [•]	[•]	
		[•]	non-adjustable	
	Total	1.00		
X2	Changes in the law	There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.		
X7	Delay damages (but not if Option X5 is also used)			
X7.1	Delay damages for Completion of the whole of the <i>works</i> are	Amount per day is 0.05% of the contract value, up to the maximum of 10% of the contract value		
X13	Performance bond			
X13.1	The amount of the performance bond is	10% of Contract value excluding VAT.		
X16	Retention (not used with Option F)			
X16.1	The <i>retention free amount</i> is	R0.		
	The <i>retention percentage</i> is	0%		
X18	Limitation of liability			
X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:	R 0		
X18.2	For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to:	The total of the Prices		

X18.3	The <i>Contractor's</i> liability for Defects due to his design which are not listed on the Defects Certificate is limited to	The total of the Prices
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	<p>The Contractor's total direct liability to the Employer for all matters arising under or in connection with this contract, other than the excluded matters, is limited to the total of the Prices and applies in contract, tort or delict and otherwise to the extent allowed under the law of the contract.</p> <p>The excluded matters are amounts payable by the Contractor as stated in this contract for</p> <ul style="list-style-type: none"> - Loss of or damage to the Employer's property, - Delay damages, - Defects liability, - Insurance liability to the extent of the Contractor's risks - loss of or damage to property (other than the <i>works</i>, Plant and Materials), - death of or injury to a person; - damage to third party property; and <p>infringement of an intellectual property right</p>
X18.5	The <i>end of liability date</i> is	<p>(i) 5 years after the <i>defects date</i> for latent Defects and</p> <p>(ii) the date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.</p> <p>A latent Defect is a Defect which would not have been discovered on reasonable inspection by the <i>Employer</i> or the <i>Supervisor</i> before the <i>defects date</i>, without requiring any inspection not ordinarily carried out by the <i>Employer</i> or the <i>Supervisor</i> during that period.</p> <p>If the <i>Employer</i> or the <i>Supervisor</i> do undertake any inspection over and above the reasonable inspection, this does not place a</p>

greater responsibility on the *Employer* or the *Supervisor* to have discovered the Defect.

Z	The Additional conditions of contract are
Z1	The <i>Additional conditions</i> of Z1 – Z17 contract are
Z1	Interpretation of the law
Z1.1	Add to core clause 12.3: Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the <i>Project Manager</i> , the <i>Supervisor</i> , or the <i>Adjudicator</i> does not constitute a waiver of rights and does not give rise to an estoppel unless the Parties agree otherwise and confirm such agreement in writing.
Z2	Providing the Works:
Z2.1	Delete core clause 20.1 and replace with the following: The <i>Contractor</i> provides the works in accordance with the Works Information and warrants that the results of the Works, when complete, shall be fit for their intended purpose
Z3	Other responsibilities:
Z3.1	Add the following at the end of core clause 27: The <i>Contractor</i> shall have satisfied himself, prior to the Contract Date, as to the completeness, sufficiency and accuracy of all information and drawings provided to him as at the Contract Date
Z3.2	The <i>Contractor</i> shall be responsible for the correct setting out of the <i>Works</i> in accordance with the original points, lines and levels stated in the <i>Works</i> Information or notified by the <i>Project Manager</i> , <i>Supervisor</i> or the <i>Employer</i> . Any errors in the positioning of the <i>Works</i> shall be rectified by the <i>Contractor</i> at the <i>Contractor's</i> own costs.
Z4	Extending the defects date:
Z4.1	Add the following as a new clause 46: If the <i>Employer</i> cannot use the <i>works</i> due to a Defect, which arises after Completion and before the <i>defects date</i> , the <i>defects date</i> is delayed by a period equal to that during which the <i>Employer</i> , due to a Defect, is unable to use the <i>works</i> .

Z4.2 If part of the *works* is replaced due to a Defect arising after Completion and before the *defects date*, the *defects date* for the part of the *works* which is replaced is delayed by a period equal to that between Completion and the date by when the part has been replaced.

Z4.3 The *Project Manager* notifies the *Contractor* of the change to a *defect date* when the delay occurs. The period between Completion and an extended *defects date* does not exceed twice the period between Completion and the *defects date* stated in the Contract Data.

Z5 Termination

Z5.1 Add the following to core clause 91.1, at the second main bullet, fifth sub-bullet point, after the words “assets or”: “business rescue proceedings are initiated, or steps are taken to initiate business rescue proceedings”.

Additional Z Clauses

Z6 Cession, delegation and assignment

Z6.1 The *Contractor* shall not cede, delegate, or assign any of its rights or obligations to any person without the written consent of the *Employer*, which consent shall not be unreasonably withheld. This clause shall be binding on the liquidator/business rescue practitioner /trustee (whether provisional or not) of the *Contractor*.

Z6.2 The *Employer* may cede and delegate its rights and obligations under this contract to any person or entity.

Z7 Joint and several liability

Insert the following new clause as Option X18.6:

Z7.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00

Z7.2 Notwithstanding any other clause in this contract, any proceeds received from any insurances or any proceeds which would have been received from any insurances but for the conduct of the *Contractor* shall be excluded from the calculation of the limitations of liability listed in the contract

Additional Z Clauses

Z8 Cession, delegation and assignment

Z8.1 The *Contractor* shall not cede, delegate, or assign any of its rights or obligations to any person without the written consent of the *Employer*, which consent shall not be unreasonably withheld. This clause shall be binding on the liquidator/business rescue practitioner /trustee (whether provisional or not) of the *Contractor*

Z8.2 The *Employer* may cede and delegate its rights and obligations under this contract to any person or entity

Z9 Joint and several liability

Z9.1 If the *Contractor* constitutes a joint venture, consortium, or other unincorporated grouping of two or more persons, these persons are deemed to be jointly and severally liable to the *Employer* for the performance of the Contract.

Z9.2 The *Contractor* shall, within 1 week of the Contract Date, notify the *Project Manager* and the *Employer* of the key person who has the authority to bind the *Contractor* on their behalf.

Z9.3 The *Contractor* does not materially alter the composition of the joint venture, consortium, or other unincorporated grouping of two or more persons without prior written consent of the *Employer*.

Z10 Ethics

Z10.1 The *Contractor* undertakes:

Z10.1.1 not to give any offer, payment, consideration, or benefit of any kind, which constitutes or could be construed as an illegal or corrupt practice, either directly or indirectly, as an inducement or reward for the award or in execution of this contract;

Z10.1.2 to comply with all laws, regulations or policies relating to the prevention and combating of bribery, corruption and money laundering to which it or the *Employer* is subject, including but not limited to the Prevention and Combating of Corrupt Activities Act, 12 of 2004.

Z10.2 The *Contractor's* breach of this clause constitutes grounds for terminating the *Contractor's* obligation to Provide the Works or taking any other action as appropriate against the *Contractor* (including civil or criminal action). However, lawful inducements and rewards shall not constitute grounds for termination.

Z10.3 If the *Contractor* is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices, including but not limited to the making of offers (directly or indirectly), payments, gifts, gratuity, commission or benefits of any kind, which are in any way whatsoever in connection with the contract with the *Employer*, the *Employer* shall be entitled to terminate the contract in accordance with the procedures stated in core clause 92.2. the amount due on termination is A1.

Z11 Confidentiality

-
- Z11.1** All information obtained in terms of this contract or arising from the implementation of this contract shall be treated as confidential by the *Contractor* and shall not be used or divulged or published to any person not being a party to this contract, without the prior written consent of the *Project Manager* or the *Employer*, which consent shall not be unreasonably withheld.
- Z11.2** If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until otherwise notified by the *Project Manager*.
- Z11.3** This undertaking shall not apply to –
- Z11.3.1** Information disclosed to the employees of the *Contractor* for the purposes of the implementation of this agreement. The *Contractor* undertakes to procure that its employees are aware of the confidential nature of the information so disclosed and that they comply with the provisions of this clause;
- Z11.3.2** Information which the *Contractor* is required by law to disclose, provided that the *Contractor* notifies the *Employer* prior to disclosure so as to enable the *Employer* to take the appropriate action to protect such information. The *Contractor* may disclose such information only to the extent required by law and shall use reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed;
- Z11.3.3** Information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the public domain or to information which was already in the possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time);
- Z11.4** The taking of images (whether photographs, video footage or otherwise) of the *works* or any portion thereof, in the course of Providing the Works and after Completion, requires the prior written consent of the *Project Manager*. All rights in and to all such images vests exclusively in the *Employer*
- Z11.5** The *Contractor* ensures that all his Subcontractors abide by the undertakings in this clause.

Z12 ***Employer's Step-in rights***

-
- Z12.1** If the *Contractor* defaults by failing to comply with his obligations and fails to remedy such default within 2 weeks of the notification of the default by the *Project Manager*, the *Employer*, without prejudice to his other rights, powers and remedies under the contract, may remedy the default either himself or procure a third party (including any subcontractor or supplier of the *Contractor*) to do so on his behalf. The reasonable costs of such remedial works shall be borne by the *Contractor*

Z12.2 The *Contractor* co-operates with the *Employer* and facilitates and permits the use of all required information, materials and other matter (including but not limited to documents and all other drawings, CAD materials, data, software, models, plans, designs, programs, diagrams, evaluations, materials, specifications, schedules, reports, calculations, manuals or other documents or recorded information (electronic or otherwise) which have been or are at any time prepared by or on behalf of the *Contractor* under the contract or otherwise for and/or in connection with the *works*) and generally does all things required by the *Project Manager* to achieve this end.

Z13 Liens and Encumbrances

Z13.1 The *Contractor* keeps the Equipment used to Provide the Services free of all liens and other encumbrances at all times. The *Contractor*, vis-a-vis the *Employer*, waives all and any liens which he may from time to time have, or become entitled to over such Equipment and any part thereof and procures that his Subcontractors similarly, vis-a-vis the *Employer*, waive all liens they may have or become entitled to over such Equipment from time to time

Z14 Intellectual Property

Z14.1 Intellectual Property (“IP”) rights means all rights in and to any patent, design, copyright, trademark, trade name, trade secret or other intellectual or industrial property right relating to the Works.

Z14.2 IP rights remain vested in the originator and shall not be used for any reason whatsoever other than carrying out the *works*.

Z14.3 The *Contractor* gives the *Employer* an irrevocable, transferrable, non-exclusive, royalty free licence to use and copy all IP related to the *works* for the purposes of constructing, repairing, demolishing, operating and maintaining the works

Z14.4 The written approval of the *Contractor* is to be obtained before the *Contractor’s* IP made available to any third party which approval will not be unreasonably withheld or delayed. Prior to making any *Contractor’s* IP available to any third party the *Employer* shall obtain a written confidentiality undertaking from any such third party on terms no less onerous than the terms the *Employer* would use to protect its IP

Z14.5 The *Contractor* shall indemnify and hold the *Employer* harmless against and from any claim alleging an infringement of IP rights (“**the claim**”), which arises out of or in relation to:

Z14.5.1 the *Contractor’s* design, manufacture, construction, or execution of the Works

Z14.5.2 the use of the *Contractor’s* Equipment, or

Z14.5.3 the proper use of the Works.



Z14.6 The *Employer* shall, at the request and cost of the *Contractor*, assist in contesting the claim and the *Contractor* may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it.

Z16 **Dispute resolution:**

Z16.1 **Appointment of the**
Adjudicator

An *Adjudicator* is appointed when a dispute arises, from the Panel of Adjudicators below. The referring party nominates an Adjudicator, which nomination is either accepted or rejected by the other party. In the instance of a rejection of the nominated *Adjudicator*, the referring Party refers the appointment deadlock to the Chairman of the Johannesburg Bar Council, who appoints an *Adjudicator* listed in the Panel of Adjudicators below

The Parties appoint the *Adjudicator* under the NEC3 Adjudicator's Contract, April 2013

Panel of Adjudicators

Name	Location	Contact details (phone & e mail)
Adv. Ghandi Badela	Gauteng	+27 11 282 3700 ghandi@badela.co.za
Mr. Errol Tate Pr. Eng.	Durban	+27 11 262 4001 Errol.tate@mweb.co.za
Adv. Saleem Ebrahim	Gauteng	+27 11 535-1800 salimebrahim@mweb.co.za
Mr. Sebe Msutwana Pr. Eng.	Gauteng	+27 11 442 8555 sebe@civilprojects.co.za
Mr. Sam Amod	Gauteng	sam@samamod.com
Adv. Sias Ryneke SC	Gauteng	083 653 2281 ryneke@duma.nokwe.co.za
Mr. Emeka Ogbugo (Quantity Surveyor)	Pretoria	+27 12 349 2027 emeka@gosiame.co.za

Z16.2 Appointment of the Arbitrator

An *Arbitrator* is appointed when a dispute arises from the Panel of Arbitrators below. The referring party nominates an Arbitrator, which nomination is either accepted or rejected by the other party. In the instance of a rejection of the nominated *Arbitrator*, the referring Party refers the appointment deadlock to the Chairman of the Johannesburg Bar Council, who appoints an *Arbitrator* listed in the Panel of *Arbitrators* below

Panel of Arbitrators

Name	Location	Contact details (phone & e mail)
Adv. Ghandi Badela	Gauteng	+27 11 282 3700 ghandi@badela.co.za
Mr. Errol Tate Pr. Eng.	Durban	+27 11 262 4001 Errol.tate@mweb.co.za
Adv. Saleem Ebrahim	Gauteng	+27 11 535-1800 salimebrahim@mweb.co.za
Mr. Sebe Msutwana Pr. Eng.	Gauteng	+27 11 442 8555 sebe@civilprojects.co.za
Mr. Sam Amod	Gauteng	sam@samamod.com
Adv. Sias Ryneke SC	Gauteng	083 653 2281 ryneke@duma.nokwe.co.za
Mr. Emeka Ogbugo (Quantity Surveyor)	Pretoria	+27 12 349 2027 emeka@gosiame.co.za

Z17	Notification of a compensation event
Z17.1	Delete “eight weeks” in clause 61.3 and replace with “four weeks”. Delete the words “unless the event arises from the Project Manager or the Supervisor giving an instruction, issuing a certificate, changing an earlier decision or correcting an assumption.”
Z18	BBBEE Certificate
Z18.1	The <i>Contractor</i> shall be expected to annually present a compliant BEE Certificate. Failure to do adhere to these requirements shall be considered a material breach of the conditions of this Contract, the sanction for which may be a cancellation of this Contract.
Z19	Communication
Z19.1	Add a new Core Clause 14.5 and 14.6 to read as follows: The <i>Project Manager</i> requires the written consent of the Employer if an action will result in a change to the design, scope, and Works information that is 5% or more
Z19.2	The <i>Project Manager</i> requires the written consent of the Employer if an action will result in the Completion Date being extended by more than 30 days.
Z20	Delegation
	As stipulated by Section 37(2) of the Occupational Health and Safety Act No. 85 of 1993 as amended the <i>Contractor</i> agrees to the following:
Z20.1	As part of this contract the Contractor acknowledge that it (mandatory) is an employer in its own right with duties as prescribed in the Occupational Health and Safety Act No 85 of 1993 as amended and agree to ensure that all work being performed, or Equipment, Plant and Materials being used, are in accordance with the provisions of the said Act, and in particular with regard to the Construction Regulations
Z21	Transformation Imperatives
Z21.1	The Service Provider shall enter into a contract (either through partnership, joint venture or sub-contracting) with (a) Targeted Enterprise(s) to perform a minimum of 30% of work.
Z21.2	A Targeted Enterprise is a registered built environment firm contracted (either by Joint Venture, partnership or sub-contracting) by the tenderer to perform a specified percentage of work stated in the Contract Data under the guidance of the tenderer; or
Z21.3	A built environment CIDB registered firm contracted (either by Joint Venture, partnership or sub-contracting) by the tenderer to perform a specified percentage of work stated in the Contract Data under the guidance of the tenderer and which complies with the following:
Z21.3.1.	Does not share equity holding with the tenderer; and
Z21.3.2.	Is registered in terms of the Company’s Act, 2008 (Act No. 71 of 2008) or Close Corporation Act, 1984 (Act No. 69 of 1984); and
Z21.3.3.	Is registered with the South African Revenue Service; and

Z21.3.4.	Is at least an Exempted Micro Enterprise (EME) with a B-BBEE Status of “Level Two Contributor”, as defined in the Amended Codes of Good Practice for measuring Broad- Based Black Economic Empowerment (published in Government Gazette No. 36928 on 11 October 2013); or
Z21.3.5.	Is at least a Qualifying Small Enterprise (QSE) with a B-BBEE Status of “Level Two Contributor”, as defined in the Amended Codes of Good Practice for measuring Broad- Based Black Economic Empowerment (published in Government Gazette No. 36928 on 11 October 2013); and
Z21.3.6.	Is 50% or more black owned or 30% or more black women owned; and
Z21.3.7.	<p>Has entered into a written relationship agreement of co-operation and assistance with the tenderer for the duration of the contract.</p> <p>The service provider shall achieve in the performance of the contract the contract skills development goal established in the CIDB Standard for developing skills through infrastructure contracts (August 2013)</p> <p>The Employer shall have no contractual relationships with Subcontractors. However, if a Subcontractor is found by the Employer to be incompetent, the Employer may request the Service Provider either to provide a Subcontractor with qualifications and experience acceptable to the Employer as a replacement, or to resume the performance of the relevant part of the Services itself.</p> <p>The Service Provider shall not sub-contract more than 25% of the tendered contract value excluding value of work allocated to Targeted Enterprise(s) and any services specified in the Scope of Work to be procured through the Employer’s Supply Chain Procurement process) to any other enterprise that does not have an equal or higher B-BBEE status level, unless the intended sub-contractor(s) is an Exempted Micro Enterprise that has the capability and ability to execute the sub-contract.</p> <p>The Targeted Enterprise(s) shall not be allowed to sub-contract any work that forms part of the specified participation percentage without the Employer’s approval.</p>
Z21.4	If due to his negligence or for reasons within its control, the Service Provider does not meet the specified target of work stated in the (measured through the value of the Fee Tendered) to the Targeted Enterprise the Employer shall be entitled to levy a penalty equal to 50% of the value by which the cumulative value of the payments to the Targeted Enterprise fails to meet the specified percentage.
Z20.4.1	If the service provider fails to substantiate that any failure to achieve the contract skills development goal was due to reasons beyond the service provider’s control, which is the only reason that may be acceptable to the employer, sanctions shall apply as follows:
Z20.4.2	In the event that the service provider does not meet the specified CSDG target, ACSA shall levy a penalty which is equal to 50% of the Total Notional Cost over contract duration of the skills development programme.

C1.2 Contract Data

Part two - Data provided by the *Contractor*

Notes to a tendering contractor:

1. Please read both the NEC3 Engineering and Construction Contract (June 2005) and the relevant parts of its Guidance Notes (ECC3-GN)¹ in order to understand the implications of this Data which the Bidder is required to complete. An example of the completed Data is provided on pages 152 to 154 of the ECC3 Guidance Notes.
2. The number of the clause which requires the data is shown in the left hand column for each statement however other clauses may also use the same data
3. Where a form field like this [] appears, data is required to be inserted relevant to the option selected. Click on the form field **once** and type in the data. Otherwise complete by hand and in ink.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

Clause	Statement	Data
10.1	The Contractor is (Name):	
	Company Registration Number	
	Company VAT Number	
	Address	
	Telephone no.	
	Fax No.	
11.2	The <i>working areas</i> are	See C3 'Service Information'
24.1	The <i>Contractor's Key people</i> are:	CV's to be appended to Resource Proposal (Annex F)

¹ Available from Engineering Contract Strategies Tel 011 803 3008, Fax 011 803 3009 or see www.ecs.co.za

1 SITE MANAGER

Name:

Qualifications relevant to this contract

Experience

2 ELECTRICIAN

Name:

Qualifications relevant to this contract

Experience

3 SAFETY OFFICER

Name:

Qualifications relevant to this contract

Experience

4 SEMI-SKILLED LABOUR

Name:

Qualifications relevant to this contract



Experience

5 OTHER

Name:

Qualifications relevant to this contract

Experience

Name:

Qualifications relevant to this contract

Experience

11.2 The following matters will be included in the Risk Register

1. Manufacturing delays
2. Delivery delays
3. Commissioning challenges and delays
4. More to be included later

C1.3 Forms of Securities

Pro formas for Bonds & Guarantees

For use with the NEC3 Engineering & Construction Contract (June 2005)

The *conditions of contract* stated in the Contract Data Part 1 include the following Secondary Options:

Option X13: Performance Bond

Each of these secondary Options requires a bond or guarantee “in the form set out in the Works Information”. Pro forma documents for these bonds and guarantees are provided here for convenience but are to be treated as part of the Works Information.

Option X16: Retention (not used with Option F)

The *Contractor* may provide a Retention Money Guarantee in the form stated here. When the *Employer* receives and accepts a Retention Money Guarantee exactly in the form stated he will instruct the *Project Manager* not to assess any amount be retained in terms of secondary Option X16.

The organisation providing the bond / guarantee does so by copying the pro forma document onto his letterhead without any change to the text or format and completing the required details. The completed document is then given to the *Employer* within the time stated in the contract.

Pro forma Performance Bond – Demand Guarantee (for use with Option X13)

(to be reproduced exactly as shown below on the letterhead of the Bank providing the Bond / Guarantee)

[Insert Contractor's name and registered address]

Bank reference No.

Date:

Dear Sirs,

Performance Bond – Demand Guarantee for [insert name of Contractor] required in terms of contract [insert Contractor's contract reference number or title]

1. In this Guarantee the following words and expressions shall have the following meanings: -

1.1	"Bank" means	[Insert name of Bank], [●] Branch, Registration No. [●]
1.2	"Bank's Address" means	[Insert physical address of Bank]
1.3	"Contract" means	the written agreement relating to providing the <i>works</i> , entered into between the <i>Employer</i> and the <i>Contractor</i> , on or about the [●] day of [●] 20[●] (Contract Reference No. [●]) as amended, varied, restated, novated or substituted from time to time;
1.4	"Contractor" means	[●] a company registered in accordance with the laws of [●] under Registration No [●].
1.5	"Employer" means	[●] a company registered in accordance with the laws of the Republic of South Africa under Registration Number [●]
1.6	"Expiry Date" means	the earlier of <ul style="list-style-type: none"> • the date that the Bank receives a notice from the <i>Employer</i> stating that all amounts due from the <i>Contractor</i> as certified in terms of the contract have been received by the <i>Employer</i> and that the <i>Contractor</i> has fulfilled all his obligations under the Contract, or • the date that the Bank issues a replacement Bond for such lesser or higher amount as may be required by the <i>Employer</i>.
1.7	"Guaranteed Sum" means	the sum of R[●], ([●] Rand)
1.8	"works" means	[insert details from Contract Data part 1]

2. At the instance of the *Contractor*, we the undersigned _____ and _____, in our respective capacities as _____ and _____ of the Bank, and duly authorized thereto, confirm that we hold the Guaranteed Sum at the disposal of the *Employer* as security for the proper performance by the *Contractor* of all of its obligations in terms of and arising from the Contract and hereby undertake to pay to the *Employer*, on written demand from the *Employer* received prior to the Expiry Date, any sum or sums not exceeding in total the Guaranteed Sum.

3. A demand for payment under this guarantee shall be made in writing at the Bank's address and shall:

- be signed on behalf of the *Employer* by a director of the *Employer*;

- state the amount claimed (“the Demand Amount”);
 - state that the Demand Amount is payable to the *Employer* in the circumstances contemplated in the Contract.
4. Notwithstanding the reference herein to the Contract the liability of the Bank in terms hereof is as principal and not as surety and the Bank’s obligation/s to make payment:
- is and shall be absolute provided demand is made in terms of this bond in all circumstances; and
 - is not, and shall not be construed to be, accessory or collateral on any basis whatsoever.
5. The Bank’s obligations in terms of this Guarantee:
- shall be restricted to the payment of money only and shall be limited to the maximum of the Guaranteed Sum; and
 - shall not be discharged and compliance with any demand for payment received by the Bank in terms hereof shall not be delayed, by the fact that a dispute may exist between the *Employer* and the *Contractor*.
6. The *Employer* shall be entitled to arrange its affairs with the *Contractor* in any manner which it sees fit, without advising us and without affecting our liability under this Guarantee. This includes, without limitation, any extensions, indulgences, release or compromise granted to the *Contractor* or any variation under or to the Contract.
7. Should the *Employer* cede its rights against the *Contractor* to a third party where such cession is permitted under the Contract, then the *Employer* shall be entitled to cede to such third party the rights of the *Employer* under this Guarantee on written notification to the Bank of such cession.
8. This Guarantee:
- shall expire on the Expiry Date until which time it is irrevocable;
 - is, save as provided for in 7 above, personal to the *Employer* and is neither negotiable nor transferable;
 - shall be returned to the Bank upon the earlier of payment of the full Guaranteed Sum or expiry hereof;
 - shall be regarded as a liquid document for the purpose of obtaining a court order; and
 - shall be governed by and construed in accordance with the law of the Republic of South Africa and shall be subject to the jurisdiction of the Courts of the Republic of South Africa.
 - will be invalid and unenforceable if any claim which arises or demand for payment is received after the Expiry Date.
9. The Bank chooses domicilium citandi et executandi for all purposes in connection with this Guarantee at the Bank’s Address.

Signed at _____ on this _____ day of _____ 20__

For and on behalf of the Bank

Bank Signatories(s)	_____
Name(s) (printed)	_____
Witness(s)	_____



Bank's seal or stamp

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C1.4 Insurance Schedule

Summary of Terms and other Matters Applicable to Employer Provided Insurance

INSURANCE CLAUSES FOR CAPEX PROJECTS

The insurance clauses in this document should be extracted and attached to tender documents and to contracts.

SECTION A: DEFINITIONS

Landside refers to:

- Areas of the airport before the security points; and
- The restricted area beyond the security points but, within the perimeter of gatehouses, passenger terminals and cargo buildings.

Airside refers to:

- The Apron / maneuvering areas; and
- Area within the airside boundary/perimeter fence, excluding the internal areas of the passenger terminals, perimeter gatehouses and cargo buildings.

SECTION B: INSURANCE CLAUSES

1. Insurance requirements for construction projects with a value below R150 million (Excluding VAT) at award and a construction period not exceeding 36 months on the LANDSIDE

- Projects with a value below R150 million are automatically covered under an ACSA umbrella insurance.
- But please note that details of all projects with a value below R150 million, and with a duration that exceeds 36 months should be forwarded to ACSA Treasury as soon as the contractor is awarded (Email: nokulunga.masiza@airports.co.za) as these projects are not automatically covered under an ACSA umbrella insurance.

1.1 Contract Works.

- The contractor must secure a contract works insurance cover in respect of all loss or damage for a minimum limit of R150 000, each and every claim

- The contractor must secure a contract works insurance cover in respect of loss or damage arising from testing or commissioning for a minimum limit of R250 000, each and every claim
- The contractor must submit to ACSA proof of cover in the form of a certificate of insurance before a contract is signed between ACSA and the contractor

1.2 Contract Works SASRIA

- The contractor must secure a contract works SASRIA insurance cover for a minimum limit of R25 000, each and every claim

1.3 Public Liability

- The contractor must secure Public Liability insurance cover for 3rd party property damage, for a minimum limit of R75 000 for each and every claim
- The contractor must secure Public Liability insurance cover for removal of lateral support, for a minimum limit of R75 000 for each and every claim
- The contractor must submit to ACSA proof of cover in the form of a certificate of insurance before a contract is signed between ACSA and the contractor

1.4 Professional Indemnity

- All consultants must secure Professional Indemnity cover for a limit of not less than **R5 million** for contracts **under R50 million** at award
- All consultants must secure Professional Indemnity cover for a limit not less than **R10 million** for contracts **over R50 million** at award
- The above is also applicable to contractors who have a material design element, excluding typical P & G related work, as part of their scope
- Proof of cover in the form of a certificate of insurance must be submitted to ACSA before a contract is signed between ACSA and the service provider

2. Insurance requirements for **construction projects with a value below R150 million (Excluding VAT) at award and construction period not exceeding 36 months on the AIRSIDE**

- Projects with a value below R150 million are automatically covered under an ACSA umbrella insurance.
- But please note that details of all projects with a value below R150million, and with **duration that exceeds 36 months** should be forwarded to ACSA Treasury as soon as the contractor is awarded (**Email: nokulunga.masiza@airports.co.za**) as these projects are not automatically covered under an ACSA umbrella insurance

2.1 Contract Works.

- The contractor must secure a contract works insurance cover in respect of all loss or damage for a minimum limit of R150 000, each and every claim;
- The contractor must secure a contract works insurance cover in respect of loss or damage arising from testing or commissioning for a minimum limit of R250 000, each and every claim;
- The contractor must submit to ACSA proof of cover in the form of a certificate of insurance before a contract is signed between ACSA and the contractor

2.2 Contract Works SASRIA

- The contractor must secure a contract works SASRIA insurance cover for a minimum limit of R25 000, each and every claim;
- The contractor must submit to ACSA proof of cover in the form of a certificate of insurance before a contract is signed between ACSA and the contractor

2.3 Public Liability

- The contractor must secure Public Liability insurance cover for 3rd party property damage, for a minimum limit of R75 000 for each and every claim;
- The contractor must secure Public Liability insurance cover for removal of lateral support, for a minimum limit of R75 000 for each and every claim;
- The contractor must submit to ACSA proof of cover in the form of a certificate of insurance before a contract is signed between ACSA and the contractor

2.4 Aviation Liability

- The contractor must secure Aviation Liability insurance cover for 3rd party property damage and injury, for a minimum limit of USD250 000 (Two hundred and fifty US Dollars) for each and every claim
- The contractor must submit to ACSA proof of cover in the form of a certificate of insurance before a contract is signed between ACSA and the contractor

2.5 Professional Indemnity

- All consultants must secure Professional Indemnity cover for a limit of not less than **R5 million** for contracts **under R50 million** at award
- All consultants must secure Professional Indemnity cover for a limit not less than **R10 million** for contracts **over R50 million** at award
- The above is also applicable to contractors who have a material design element, excluding typical P & G related work, as part of their scope
- Proof of cover in the form of a certificate of insurance must be submitted to ACSA before a contract is signed between ACSA and the service provider



3. Insurance requirements for construction projects with a value above R150 million (Excluding VAT), and/or projects with a construction period that exceed 36 months on the LANDSIDE and AIRSIDE

- Projects with a value of more R150 million, and projects with a construction period that exceeds 36 months are not automatically covered under the annual construction policies. A separate quote and deductibles are provided by insurers per project. Details of these projects should be forwarded to ACSA Treasury as soon as the contractor is awarded (Email: nokulunga.masiza@airports.co.za).

C2.1 Pricing assumptions: Option B

1. The *conditions of contract*

1.1. How work is priced and assessed for payment

Clause 11 in NEC3 Engineering and Construction Contract, June 2005 (ECC3) Option B states:

Identified and defined terms	11 11.2	<p>(21) The Bill of Quantities is the <i>bill of quantities</i> as changed in accordance with this contract to accommodate implemented compensation events and for accepted quotations for acceleration.</p> <p>(28) The Price for Work Done to Date is the total of</p> <p style="padding-left: 40px;">the quantity of the work which the <i>Contractor</i> has completed for each item in the Bill of Quantities multiplied by the rate and a proportion of each lump sum which is the proportion of the work covered by the item which the <i>Contractor</i> has completed.</p> <p style="padding-left: 40px;">Completed work is work without Defects which would either delay or be covered by immediately following work.</p> <p>(31) The Prices are the lump sums and the amounts obtained by multiplying the rates by the quantities for the items in the Bill of Quantities.</p>
-------------------------------------	------------	--

This confirms that Option B is a re-measurement contract and the bill comprises only items measured using quantities and rates or stated as lump sums. Value related items are not used. Time related items are items measured using rates where the rate is a unit of time.

1.2. Function of the Bill of Quantities

Clause 55.1 in Option B states, "Information in the Bill of Quantities is not Works Information or Site Information". This confirms that instructions to do work or how it is to be done are not included in the Bill, but in the Works Information. This is further confirmed by Clause 20.1 which states, "The *Contractor* Provides the Works in accordance with the Works Information". Hence the *Contractor* does **not** Provide the Works in accordance with the Bill of Quantities. The Bill of Quantities is only a pricing document.

1.3. Guidance before pricing and measuring

Employers preparing tenders or contract documents, and tendering contractors are advised to consult the sections dealing with the bill of quantities in the NEC3 Engineering and Construction Contract (June 2005) Guidance Notes before preparing the *bill of quantities* or before entering rates and lump sums into the *bill*.

The NEC approach to the P & G bill assumes use will be made of method related charges for Equipment applied to Providing the Works based on durations shown in the Accepted Programme, fixed charges for the use of Equipment that is required throughout the construction phase, time related charges for people working in a supervisory capacity for the period required, and lump sum charges for other facilities or services not directly related to performing work items typically included in other parts of the bill. The P & G section of the bill is not used for the assessment of compensation events.

2. Measurement and payment

2.1. Symbols

The units of measurement described in the Bill of Quantities are metric units abbreviated as follows:

Abbreviation	Unit
%	percent
H	hour
ha	hectare
kg	kilogram
kl	kilolitre
km	kilometre
km-pass	kilometre-pass
kPa	kilopascal
kW	kilowatt
L	litre
M	metre
mm	millimetre
m ²	square metre
m ² -pass	square metre pass
m ³	cubic metre
m ³ -km	cubic metre-kilometre
MN	meganewton
MN.m	meganewton-metre
MPa	megapascal
No.	number
Prov sum ²	provisional sum
PC-sum	prime cost sum
R/only	Rate only
Sum	Lump sum
T	ton (1000kg)
W/day	Work day

² Provisional Sums should not be used unless absolutely unavoidable. Rather include specifications and associated bill items for the most likely scope of work, and then change later using the compensation event procedure if necessary.

2.2. General assumptions

- 2.2.1. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance has been made in the quantities for waste.
- 2.2.2. The Prices and rates stated for each item in the Bill of Quantities shall be treated as being fully inclusive of all work, risks, liabilities, obligations, overheads, profit and everything necessary as incurred or required by the *Contractor* in carrying out or providing that item.
- 2.2.3. An item against which no Price is entered will be treated as covered by other Prices or rates in the *bill of quantities*.
- 2.2.4. The quantities contained in the Bill of Quantities may not be final and do not necessarily represent the actual amount of work to be done. The quantities of work assessed and certified for payment by the *Project Manager* at each assessment date will be used for determining payments due.
- 2.2.5. The short descriptions of the items of payment given in the *bill of quantities* are only for the purposes of identifying the items. Detail regarding the extent of the work entailed under each item is provided in the Works Information.

2.3. Departures from the *method of measurement*

- 2.3.1. None

2.4. Amplification of or assumptions about measurement items

For the avoidance of doubt the following is provided to assist in the interpretation of descriptions given in the *method of measurement*. In the event of any ambiguity or inconsistency between the statements in the *method of measurement* and this section, the interpretation given in this section shall be used.

- 2.4.1. Provision is made in the Bill for the addition of items which the Contractor may deem necessary for the successful completion of the works. The total price for the project is deemed to be for the complete and functional installation, in accordance with the specifications. Under no circumstances will additional payments therefore be made for any work forming part of the Works which could reasonably have been foreseen at tender stage as being required to complete the Works. (This is not to be confused with additional work which, subject to the approval of the Engineer, may at times become necessary or be requested and for which additional payments will be made).
- 2.4.2. The responsibility for the accuracy of the quantities written into the Bills remains with the person who prepared the Bills. The Bidder shall be relieved of responsibility of measuring the defined quantities at tender stage, and the Total Tender Price submitted shall be in respect of the quantities set out in the Bills, although he will be required to make his assessment of items such as brackets, fixings, etc, from details stated in the Bills and shall include in the item prices for such small installation materials as are required for the complete installation in accordance with the Specifications.
- 2.4.3. Unless a separate rate for the supply and for the installation of any item is specifically called for, the supply and installation costs of any item shall be fully included in the unit price.

2.4.4. The description of each item shall, unless otherwise stated herein, be held to include making, conveying and delivering, unloading, storing, unpacking, hoisting, setting, fitting and fixing in position, cutting and waste, patterns, models and templates, plant, temporary works, return of packing, establishment charges, profit and all other obligations arising out of the conditions of contract.

2.4.5. In these Bills the following meaning is attached to:

a) Supply and Delivery (Material)

The prices for each item shall include for the complete supply and delivery to and off-loading on the sites and must be inclusive of all sundry material and items necessary for the completion, commissioning and putting to work of the equipment, as required by the specification whether set out in detail or not.

b) Installation (Labour)

Material installation prices are to provide, amongst others, for assembling, positioning, preparation, testing, completion, painting, commissioning, initial maintenance and handing over to the Employer in a satisfactory operating condition of the material.

2.4.6. The Bidder shall include in his tariffs for all outages to be done during the night from 22H00 until 04H00.

2.4.7. The quantities in these Bills of Quantity are not to be used for ordering materials.

Submission

SUB 2B - SWITCHGEAR ELECTRICAL BUDGET ESTIMATE					
Item No	DESCRIPTION	UOM	QTY	RATE	SUBTOTAL
100	BUS BAR TRUNKING				
	Incomer Section and Busbar Systems - Supply and Installation. Reference shall be made to the relevant single line, schematic and GA drawings				
101	3000A, 50kA air insulated busbar trunking including supports, ends, bends and flexibles - connected from transformer 2 to MCC panel incomer 2				
	Material rate	m	20		
	Labour rate	m	20		
102	3000A, 50kA air insulated busbar trunking including supports, ends, bends and flexibles - to be joined to existing bus bar trunking and connect to new MCC panel incomer 1				
	Material rate	m	6		
	Labour rate	m	6		
200	MCC PANEL				
201	Incomer Section - 2100H x 800W x 1200D steel work including panel doors c/w 400V, 3000A, 65kA ACB, control switchgear, metering, mccbs, surge arrestors, indication lamps etc. The price shall also include the busbars for connection between				

	the incomer and the busbar trunking and between incomer outgoing side and MCC busbars.GA drawing, single line drawing and typical incomer drawing shall be referred to for pricing. Arc Protected panel, to be priced.				
	Material rate	No	3		
	Labour rate	No	3		
202	3000A, 50kA, MCC panel including all steel work, Bus bars, base frames, supports in trenches, doors etc				
	Material rate	m	5,4		
	Labour rate	m	5,4		
203	UPS 3 Phase in 3/ 1 Phase out, 8kVA including changeover system				
	Material rate	No	1		
	Labour rate	No	1		
204	UPS DB				
	Material rate	No	1		
	Labour rate	No	1		
	Feeders				
205	125A Feeder - 50kA, MCCB				
	Material rate	No	3		
	Labour rate	No	3		
206	160A Feeder - 50kA, MCCB				
	Material rate	No	4		
	Labour rate	No	4		
207	400A Feeder - 50kA, MCCB				

	Material rate	No	3		
	Labour rate	No	3		
208	100A Feeder - 50kA, MCCB				
	Material rate	No	4		
	Labour rate	No	4		
209	50A Feeder - 50kA, MCCB				
	Material rate	No	2		
	Labour rate	No	2		
210	32A Feeder - 50kA, MCCB				
	Material rate	No	2		
	Labour rate	No	2		
211	Changeover system				
	Material rate	No	2		
	Labour rate	No	2		
300	PLC PANELS AND SIGNALLING				
301	PLC panel and Accessories				
	Material rate	No	1		
	Labour rate	No	1		
302	Ethernet Cables				
	Material rate	m	100		
	Labour rate	m	100		
	Material rate - Terminations	No	4		
	Labour rate - Terminations	No	4		
303	Bosal Conduit - 20mm (Including all saddles, bends, end caps etc)				
	Material rate	m	100		
	Labour rate	m	100		
	Material rate - Terminations	No	4		
	Labour rate - Terminations	No	4		

304	1.5mm 19 Core control cables PVC/SWA				
	Material rate	m	100		
	Labour rate	m	100		
	Material rate - Terminations	No	6		
	Labour rate - Terminations	No	6		
400	POWER CABLES				
	All cables PVC/SWA				
401	150mm 4C				
	Material rate	m	20		
	Labour rate	m	20		
	Material rate - Terminations	No	3		
	Labour rate - Terminations	No	3		
402	120mm 4C				
	Material rate	m	20		
	Labour rate	m	20		
	Material rate - Terminations	No	3		
	Labour rate - Terminations	No	3		
403	95mm 4C				
	Material rate	m	30		
	Labour rate	m	30		
	Material rate - Terminations	No	3		
	Labour rate - Terminations	No	3		
404	70mm 4C				
	Material rate	m	30		
	Labour rate	m	30		
	Material rate - Terminations	No	3		
	Labour rate - Terminations	No	3		
405	50mm 4C				
	Material rate	m	10		
	Labour rate	m	10		
	Material rate - Terminations	No	1		

	Labour rate - Terminations	No	1		
406	35mm 4C				
	Material rate	m	70		
	Labour rate	m	70		
	Material rate - Terminations	No	7		
	Labour rate - Terminations	No	7		
407	25mm 4C				
	Material rate	m	10		
	Labour rate	m	10		
	Material rate - Terminations	No	1		
	Labour rate - Terminations	No	1		
408	16mm 4C				
	Material rate	m	40		
	Labour rate	m	40		
	Material rate - Terminations	No	4		
	Labour rate - Terminations	No	4		
409	70mm 3C XLPE				
	Material rate	m	30		
	Labour rate	m	30		
	Material rate - Terminations	No	1		
	Labour rate - Terminations	No	1		
410	Consumable	Lot	1		
500	CABLE JOINTING KITS				
501	120 - 150mm 4C				
	Material rate	No	8		
	Labour rate	No	8		
502	95mm 4C				
	Material rate	No	8		
	Labour rate	No	8		

503	70mm 4C				
	Material rate	No	8		
	Labour rate	No	8		
504	25-50mm 4C				
	Material rate	No	8		
	Labour rate	No	8		
505	6-16mm 4C				
	Material rate	No	8		
	Labour rate	No	8		
600	EARTHING AND BONDING				
601	Earthing and Bonding of the Entire Installation including joining of existing earth cables (tinned copper wires and galvanised steel wires cable preferable)				
	Material rate	Sum	1		
	Labour rate	Sum	1		
602	Check Substation Earthing integrity	Sum	1		
700	CABLE SUPPORT SYSTEMS				
	Including all bends, supports, earthing etc				
701	305mm medium duty - cable tray				
	Material rate	m	20		
	Labour rate	m	20		
702	152mm medium duty - cable tray				
	Material rate	m	20		
	Labour rate	m	20		

703	76mm medium duty - cable tray				
	Material rate	m	20		
	Labour rate	m	20		
800	MISCELLANEOUS				
801	Testing and Commissioning & COC	Sum	1		
802	As Built Drawings - marking up of drawings on site	Sum	1		
803	Modification of trench covers as per existing to suit new panel dimensions	Sum	1		
804	Remove existing MCC and changeover new MCC and transport to a location within the airport	Sum	1		
805	Civil works for bus bar trunking and making good after the installation (including Painting and closing of the whole)	Sum	1		
900	PRELIMINARY & GENERALS				
901	Fixed charges for site establishment / de-establishment	Sum	1		
902	Airside Induction & Training	Sum	1		
903	Time related chargers for construction supervision, contract admin etc	Months	4		

904	Personnel Permits (For a period of 1 year)	Each			
905	Vehicle Temporary Day Permits for an 8-ton truck and bakkies.	Sum	1		
906	Company Insurance (Refer to C1.4) (Required for Airside Safety Plan)	Sum	1		
907	10% Performance Bond (Bank Handling fees) Refer to C1.3	Sum	1		
908	Site establishment	Sum	1		
909	Site de-establishment	Sum	1		
910	Safety file, PPE, and Safety compliance	Sum	1		
	SUBTOTAL				
	Contingency @ 10%				
	Sub - Total EXCL VAT				
	TOTAL TENDER PRICE (EXCLUSIVE OF VAT) CARRIED OVER TO FORM OF OFFER AND ACCEPTANCE (C1.1)				



NOTE:

- [a] Bidders are to note that the Total Price above (which EXCLUDES VAT) must be carried over to the form of offer and acceptance; and all provisional and prime cost amounts shown in the Bills of Quantities must be included therein. No adjustments will be made for any failure by Bidders to include these in the Total Tender Price for this project.

Total Price _____
(in words) _____

Contract Period

The contract period offered is _____ weeks.



Name of Electrical Contractor

Address

PART 3: SCOPE OF WORK

Document reference	Title	No of pages
	This cover page	1
C3.1	<i>Employer's Works Information</i>	16
C3.2	<i>Contractor's Works Information</i>	2
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1 Description of the works

1.1 Executive overview

The project comprises the following:

a) Terminal Substation 2

- Supply and Install new Low Voltage Main Switchboard that will replace the existing one.
- The new Switchboard will be manufactured as per design drawings listed on item 7 below.
- The current existing Switchboard must be disposed as per ACSA company policy.
- The existing cables currently connected on the existing switchboard must be re-used.
- The existing two MV distribution transformers must be connected via the existing 400V busbar system by means of flexible tails and busbars.

NB: 2MVA transformers are already purchased by ACSA.

1.2 Employer's objectives and purpose of the works

The Employer plans to strengthen the electrical supply at this substation 2B to cater for a planned increase in load. For compliance with OHS Act 85 of 1993, IEC61439, SANS10142-1 and SANS641 to protect our personnel and infrastructure.

1.3 Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
ACSA	Airport Company South Africa
ACB	Air Circuit Breaker
AVOP	Airside Vehicle Operating Procedure
IEC	International Electrotechnical Commission
KV	Kilo Voltage

LV	Low Voltage
MV	Medium Voltage
MVA	Mega Volt Amp
ORTIA	Oliver Regional Tambo International Airport
PILC	Paper Insulation Lead Cable
SOC	State Owned Company
XLPE	Cross-linked polythylene
VAT	Value Added Tax
V	Volt

2 Management and start up.

2.1 Management meetings

Regular meetings of a general nature may be convened and chaired by the *Project Manager* as follows:

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk register and compensation events	Weekly	ORTIA	
Overall contract progress and feedback	Monthly	ORTIA	<i>Employer, Contractor, Supervisor,</i>

Meetings of a specialist nature may be convened as specified elsewhere in this Works Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *works*. Records of these meetings shall be submitted to the *Project Manager* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

2.2 Documentation control

All correspondence between the Contractor, Consultant and the Employer shall be performed in an organized manner as defined below.

In this context, by correspondence is meant:

- a) Letters
- b) Telefaxes
- c) E-mail

All correspondence originating from a sub-contractor shall first be dealt with and coordinated by the Contractor and submitted as the contractor's correspondence.

For the purposes of distribution and archiving, a correspondence of any type shall not deal with a mixture of various subjects. This refers to both technical and commercial items, i.e. where practical, each technical and commercial subject shall be dealt with in separate correspondence.

All correspondence shall bear the Project Title and the Contract Number.

Furthermore, all correspondence shall bear the date of issuance, in DD.MM. YYYY format.

a) **LETTERS**

For official correspondence with contractual and/or financial implications, letters shall normally be used.

The Contractor shall address all his letters to the Consultant. The original shall be submitted to the Consultant and a copy to the Employer.

Letters to the Contractor shall usually be submitted by the Consultant, with a copy to the Employer. Should the Employer wish to write directly to the Contractor, he shall copy to the Consultant.

b) **TELEFAXES**

Telefax shall be used whenever information, letters, sketches or similar documents have to be transmitted urgently, or in advance. However, a document having been "faxed" shall be considered a valid document only once receipt has been acknowledged or after submission of the original letter/document.

c) **E-MAIL (Unofficial correspondence)**

For ease of communication, e-mail will be the preferred medium for "normal" communication. However, any communication which the originator regards as Official and "for the record" needs to be on a letterhead, signed and either faxed and/or submitted in hard copy to the recipient. Hence, in the case of a dispute, e-mailed correspondence shall not ipso facto be accepted as proof of error free communication. However, an e-mail shall be considered a valid document only once receipt has been acknowledged or after a response have been received.

The onus is on the sender to either scan confidential information or use Portable Document Format (.pdf).

Forms such as Payment Certificates and Invoices shall always either be scanned in or transmitted in .pdf files.

2.3 Health and safety risk management

The Contractor shall comply with the Employer's health and safety requirements as contained in Annexure B to this Works Information.

The Contractor shall submit with this Tender, a complete Health and Safety Plan for this project, for the Employer's approval.

The Employer and the Contractor hereby agree, in terms of the provisions of any relevant legislation governing safety or health, that the Contractor as an employer in its own right and in its capacity as contractor for the execution of the works, shall have certain obligations and that the following arrangement shall apply between them to ensure compliance by the contractor with the provisions of the legislation, namely:-

- (a) The Contractor undertakes to acquaint the appropriate officials and the employees of the contractor with all relevant provisions of relevant legislation and the regulations promulgated in terms thereof, and
- (b) The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the relevant legislation and regulations will be fully complied with, and
- (c) The Contractor hereby accepts sole liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the relevant legislation and regulations and expressly absolve the Employer and the Employer's Consulting Engineers from being obliged to comply with any of the aforesaid duties, obligations and prohibitions in respect of the work included in the contract.
- (d) The contractor shall be obliged to report forthwith to the Employer any investigation, complaint, or criminal charge which may arise as a consequence of the provisions of the relevant legislation and regulations pursuant to work performed on behalf of the employer and shall, on written demand, provide full details in writing of such investigation, complaint or criminal charge.

The Contractor shall furthermore comply with all the Employer's requirements for security and safety. An active accident prevention programme shall be maintained. A responsible person shall be appointed and he is to co-operate fully with the Engineers Representative in all matters pertaining to accident prevention.

The Contractor shall comply with:

- The Occupational Health and Safety Act, 1993, and all regulations.
- The Construction Regulations, 2003.
- The Contractor undertakes not to do, or not to allow anything to be done which will contravene any of the provisions of the Act, Regulations or Safety and Operating Procedures

When apparatus is in commission or is to be commissioned:

- The Contractor shall ensure that a team member on site of the Contractor is authorized as a Responsible Person.
- The Contractor shall ensure that the Responsible Person shall supervise the works at all times and be available to take permits where necessary.

The Employer may, at any stage during the duration of this contract, be entitled to:

- do safety audits at the Contractor's premises, its work-places and on its employees;
- refuse any employee, sub-contractor or agent of the Contractor access to its premises if such person has been found to commit any unlawful act or any unsafe working practice or is found to be not authorized or qualified in terms of the Act
- issue the Contractor with a work stop order should the Employer become aware of any unsafe working procedures or conditions or any non-compliance with the Act, Regulations and Procedures referred to above by the Contractor or any of its employees, sub-contractors or agents.

- No extension of time will be allowed as a result of any action taken by the Employer in terms of the above and the Contractor shall have no claim against the Employer as a result thereof.
- An authorized Employer's representative will be on site for regular site visits to monitor the Contractor's implementation of health, safety and quality Standards.
- The works to be enclosed with chevron barricade tape supplied and installed by the Contractor and set out by the Employer.
- The Contractor shall be responsible for all expenses incurred to ensure adherence to Health and Safety Regulations as stipulated above.
- The Contractor shall comply with all the requirements of the CONSTRUCTION REGULATIONS.
- The Contractor shall adhere to the applicable standards and procedures attached to this contract.

2.4 Environmental constraints and management

The Contractor shall comply with the environmental criteria and constraints stated in the Employer's EMS included in Annexure B.

2.5 Quality assurance requirements

- a) The Contractor needs to submit a quality plan indicating the control points for quality to ensure that the works are done according to specification.
- b) The Contractor shall control his activities and processes in such a way as to ensure compliance with the Employer's Specifications and Standards. He shall carry out, as a minimum requirement all the tests laid down in the specifications and shall submit all the test results to the Employer.
- c) The Employer's Specifications and Standards, as indicated in this document, are requirements of this contract.
- d) The Contractor shall be responsible for the relevant Quality Assurance Requirements to be imposed on his sub-contractors and suppliers of materials in terms of the above standards.
- e) The Contractor shall submit with this Tender, a complete list of sub-contractors, he intends to make use of for this project, for the Employer's approval. The Contractor will not appoint any sub-contractor without the acceptance of the Employer.
- f) Only new, good quality materials may be used and where applicable materials must comply with the specifications of the South African Bureau of Standards or IEC Specifications.

2.6 Programming constraints

- All outages shall be performed during the night from 00H00 until 04H00.
- All supplies to all loads shall be maintained during the extended working hours of ACSA.
- During the execution of this contract, the existing 11kV and 400V networks will remain in full operation. It is of the utmost importance that the Contractor shall make do allowance for the co-ordination of his program with the operation of the network.

Any anticipated delays or problems experienced with the execution of construction activities shall immediately be brought to the attention of the Engineer.

No standing time or extension of time will be allowed due to bad co-ordination and/or programming by the Contractor and should his action cause unplanned outages, then he will be accountable therefore.

2.7 Contractor's management, supervision and key people

None

2.8 Invoicing and payment

Within seven days of receiving a payment certificate from the *Project Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice showing the amount due for payment equal to that stated in the *Project Manager's* payment certificate.

The *Contractor* shall address the tax invoice to Airports Company South Africa SOC Ltd. and include on each invoice the following information:

Name and address of the *Contractor* and the *Project Manager*;

The contract number and title;

Contractor's VAT registration number;

The *Employer's* VAT registration number 493 013 8393;

Description of work done by cross reference to *Project Manager's* certificate;

Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;

2.9 Contract change management

None

2.10 Provision of bonds and guarantees

The form in which a bond or guarantee required by the *conditions of contract* (if any) is to be provided by the *Contractor* is given in Part 1 Agreements and Contract Data, document C1.3, Sureties.

The *Employer* may withhold payment of amounts due to the *Contractor* until the bond or guarantee required in terms of this contract has been received and accepted by the person notified to the *Contractor* by the *Project Manager* to receive and accept such bond or guarantee. Such withholding of payment due to the *Contractor* does not affect the *Employer's* right to termination stated in this contract.

2.11 Training workshops and technology transfer

The operation of all the equipment supplied under this contract shall be demonstrated at length to the local maintenance personnel.

3 Engineering and the *Contractor's* design

3.1 *Employer's* design

The Employers' design is limited to the following:

- Single line diagrams of the 11kV and 400V existing switchgear.
- New switchboard single line, wiring, schematic and layout diagram.
- Layout of the existing buildings and equipment.
- Cable block diagram.
- New switchboard panel layout and general arrangement.
- Dimensional drawings and wiring diagrams of the switch boards.

3.2 Parts of the *works* which the *Contractor* is to design

The Contractor is responsible for the detail design of the following:

- Final LV Switchboard design, single line diagram and schematics drawings from the OEM.
- Connection and wiring drawings.

3.3 Procedure for submission and acceptance of *Contractor's* design

The Contractor shall as a minimum submit the following for approval:

- Dimensional drawings showing the dimensions of equipment to be supplied by the contractor.
- Manufacturing programme of LV Switchboards and bus coupling panels.
- QA Plan for the equipment to be manufactured

3.4 Other requirements of the *Contractor's* design

None.

3.5 Use of *Contractor's* design

See core clause 22.1 of NEC.

3.6 Design of Equipment

None

3.7 Equipment required to be included in the works

- Air circuit breakers and Moulded circuit breakers
- Busbars and LV cables
- PLC and HMI
- Power Meters

3.8 As-built drawings, operating manuals and maintenance schedules

Three copies of the complete instruction manuals inclusive of all drawings for the operation and maintenance of the equipment shall be handed over to the Engineer (Acsa).

Two CD's containing the following shall also be handed over to the Engineer (Acsa):

- A soft copy of the complete instruction manual and drawings
- Setting files for all relays and meters
- Relay and meter software for communication to the relays and meters.

4 Procurement

4.1 People

4.1.1 Minimum requirements of people employed on the Site

The Contractor is to be registered on the ACSA database for contractors and permits are to be obtained from ACSA for all workers on site.

4.1.2 BBBEE

Requirements are included in the Invitation to Bidders

4.2 Subcontracting

4.2.1 Mandatory manufacturers

n/a

4.2.2 Subcontract documentation, and assessment of subcontract tenders

None

4.2.3 Limitations on subcontracting

None

4.2.4 Attendance on subcontractors

None

4.3 Plant and Materials

4.3.1 Quality

As per company quality plan or standard.

4.3.2 Plant & Materials provided “free issue” by the Employer

The Employer will provide the following items:

- n/a

4.3.3 Contractor’s procurement of Plant and Materials

None

4.3.4 Spares and consumables

Spare parts as detailed in Section 6 of this Works Information will be supplied.

4.4 Tests and inspections before delivery

The whole of the materials used in the Project shall be subject to such inspection and test at the manufacturer’s works as prescribed in the appropriate material standards, required in the specific clauses of the Contract or the Engineer may direct from time to time as the work proceeds.

The manufacturer shall perform all tests as prescribed by IEC or other standards applicable to the equipment. In addition to these tests the manufacturer shall perform the tests specified in the manufacturer’s own factory standard for quality control.

The Engineer reserves the right to witness any or all tests and the Contractor shall inform the Engineer at least 7 days in advance of any tests which will be performed.

The cost of such inspection and tests, including the provision and use of test equipment, with a quantified number of visits by the Engineer shall be included in the Tender Price.

If, due to the Contract work and/or component materials not complying with this specification, further tests are necessary, the Contractor shall pay all additional costs which may be incurred in re-testing.

The approval by the Engineer of the results of such inspection and tests shall not relieve the Contractor of his obligations under the Contract for the satisfactory performance of the plant and materials.

During the execution of the Contract, test specimens, if required by the Engineer, shall be taken from the materials for the purpose of check tests or analyses by Independent Authorities. Such specimens shall be prepared for testing and forwarded at the expense of the Contractor to the Testing Authorities selected by the Engineer.

The Contractor shall deliver to the Engineer three copies of the test certificates covering all tests. In case the original certificate is not in the English language, three copies of a translation into English of the certificate plus one copy in the original language shall be delivered to the Engineer.

As a minimum, Factory Acceptance Tests shall be performed on the following:

- As per IEC61439

4.5 Marking Plant and Materials outside the Working Areas

None

4.6 Contractor's Equipment (including temporary works).

None

5 Construction

5.1 Temporary works, Site services & construction constraints

5.1.1 Employer's Site entry and security control, permits, and Site regulations

All contractor Employees shall obtain permits from ACSA for access to site.

5.1.2 Restrictions to access on Site, roads, walkways and barricades

All deliveries that will obstruct portions of the roadways or public routes for any period of time are to be restricted between 00h00 and 04h00. No construction related vehicles are allowed on the roads alongside the terminal buildings. No queuing of delivery vehicles will be permitted on any part of the route to the project site. All logistics affecting operations are to be approved by the relevant ACSA Managers.

All vehicles related to the contractor's works are to be parked within the contractor's hoarded site or in public parking with costs for the contractor's account. Any contractor vehicle towed for illegal parking will be for the contractor's account.

5.1.3 People restrictions on Site; hours of work, conduct and records

Contractors are limited to their actual site establishment areas and places of work and under no circumstances will materials, equipment, tools, cooking or any other disturbance be allowed in public areas and delivery of materials via the normal airport traffic routes is strictly prohibited. Use of the public people mover infrastructure is prohibited.

Contractor's employees are to be clearly identifiable and they must be discouraged from visiting the public areas of the airport.

5.1.4 Health and safety facilities on Site

None

5.1.5 Environmental controls, fauna & flora, dealing with objects of historical interest

None

5.1.6 Title to materials from demolition and excavation

The Contractor has no title to materials from demolition and excavations.

5.1.7 Cooperating with and obtaining acceptance of Others

The Employer has various contracts in progress and the Contractor may be required to adjust his program and activities to coordinate with others.

All hoarding is to comply with the ACSA standard (MANAGER – (011) 921 6226).

The hoarding is to be maintained to ACSA's specifications at all times. Any costs incurred by ACSA for repairing the Contractor's hoarding will be forwarded to the contractor for payment. To avoid this, the contractor is to ensure that the hoarding is maintained on a daily basis.

No existing finishes outside the defined site are to be changed without prior approval by ACSA.

All electrical installations and loading is to be approved by ACSA Electrical Division (MANAGER - (011) 921 6883) prior to any work being executed.

All cable installations are to comply with the ACSA specification as a minimum and be approved by ACSA IT and Electrical.

All mechanical alterations or impact thereon, i.e. air-conditioning, are to be approved by the ACSA Mechanical Division (MANAGER - (011) 921 6225) prior to any work being executed.

The use of any people mover infrastructure for delivery is to be approved by Mechanical Division (MANAGER).

All alterations to fire detectors and sprinklers or impact thereon are to be approved by ACSA Mechanical Division (MANAGER - (011) 921 6225) prior to any work commencing.

5.1.8 Publicity and progress photographs

None

5.1.9 Contractor's Equipment

The Contractor shall as part of his reporting includes a list of Contractors Equipment and material on site. The list shall include Registration numbers, serial numbers, whether it is rented with the provider's details.

5.1.10 Equipment provided by the Employer

The Employer will provide only equipment listed in 4.3.2.

5.1.11 Site services and facilities

The site as detailed on the drawings will be available to the Contractor for the execution the Works. Limited power will be available within the rooms. The Contractor is to source his own water and will be responsible for his own waste disposal. The Contractor shall be responsible for the supply on site of his own telephone or cellular phone.

Existing cable trenches and cable ladders and trays are to be utilized for cable routes. The Contractor is to open cable trenches and include the cost in his rates. All cable trench covers are to be returned to their positions, all

covers damaged or broken by the Contractor is to be replaced by the contractor at his costs. All cable trays and ladders are to be tidied after cable installation.

5.1.12 Facilities provided by the Contractor

The Contractor shall erect and maintain at his costs his own covered storage and office that he may require. The yard shall be fenced by the Contractor and maintenance of the yard will be his responsibility. The yard shall be kept in a clean and tidy condition at all times to the satisfaction of the Engineer. On completion of the Project, all structures and installations shall be removed from site, to the satisfaction of the Engineer.

5.1.13 Existing premises, inspection of adjoining properties and checking work of Others

None

5.1.14 Survey control and setting out of the works

The Contractor will be responsible for setting out the positions of the new equipment. The Engineer is to approve such positions before actual installation commence.

5.1.15 Excavations and associated water control

None

5.1.16 Underground services, other existing services, cable and pipe trenches and covers

The Contractor shall be liable for all damage and breakage to other services. Repair will be done by adequately qualified personnel or contractors. If the damages or breakage is not repaired / replaced to the satisfaction of the Engineer within a reasonable time, the Engineer shall be entitled to appoint another Contractor to repair such damage or breakage and debit the account of the Contractor. All damages and breakages are to be reported to the Engineer.

5.1.17 Control of noise, dust, water and waste

The contractor shall keep noise to a minimum and to between 00h00 and 04h00.

The site is to be maintained in a reasonable state of tidiness at all times.

Rubble may not be accumulated on site. Suitable skips are to be provided for the works.

All dust and debris resulting from construction work is to be contained within the hoarded site. Any materials and rubble outside the hoarded site will be removed by ACSA from the Airport without notice to the contractor and will be for the contractor's account.

The Contractor will ensure the proper handling and carting away of spoil material, and the cleaning of ablution areas set aside for the use of the contractor's staff.

5.1.18 Sequences of construction or installation

To be finalised by awarded bidder and submitted for approval.

5.1.19 Giving notice of work to be covered up

Notice of work to be covered up is to be given by the Contractor to the Engineer.

5.1.20 Hook ups to existing works

All attachment points for the overhead busbar systems are to be marked and approved by the Engineer.

5.2 Completion, testing, commissioning and correction of Defects

5.2.1 Work to be done by the Completion Date

On or before the Completion Date the *Contractor* shall have done everything required to Provide the Works except for the work listed below which may be done after the Completion Date but in any case before the dates stated. The *Project Manager* cannot certify Completion until all the work except that listed below has been done and is also free of Defects which would have, in his opinion, prevented the *Employer* from using the *works* and Others from doing their work.

	Item of work	To be completed by
	None	Within days after Completion

5.2.2 Use of the *works* before Completion has been certified

The Employer will only take over fully tested and commissioned operational boards. The existing equipment is in operation and any outages during the day between 04h00 and 22h00 cannot be accommodated. A gradual transfer of cables from the existing to the new distribution boards is required.

5.2.3 Materials facilities and samples for tests and inspections

The Contractor will provide all materials, facilities and samples for tests and inspections as described in the Works Information and Detail Specification.

5.3.4 Commissioning

Detail descriptions for commissioning are included in Annexure A. Commissioning will be done in phases and is to be completed before completion.

5.2.5 Start-up procedures required to put the *works* into operation

None

5.2.6 Take over procedures

All documentation as required by the Employer and Engineer is to be submitted.

5.2.7 Access given by the *Employer* for correction of Defects

All access and outages are to be pre-arranged with ACSA before entering buildings

5.2.8 Performance tests after Completion

None

5.2.9 Training and technology transfer

The Contractor is to provide hands-on training on the equipment during installation.

5.2.10 Operational maintenance after Completion

The contractor is to take oil samples on all the new transformers after 6 months and also after 12 months from switch-on of the transformers.

6 Plant and Materials standards and workmanship

Plant and Material standards and workmanship requirements are included in Annexure A and B.

6.1 Investigation, survey and Site clearance

The Contractor shall visit the site during the equipment detail design phase to ensure that the equipment will fit within the existing building structures.

6.2 Building works

None.

6.3 Civil engineering and structural works

Not applicable

6.4 Electrical & mechanical engineering works

The specifications are all included in the Annexure A : Detail Technical Specification of this document.

7 List of drawings

7.1 Drawings issued by the *Employer*

This is the list of drawings issued by the *Employer* at or before the Contract Date and which apply to this contract.

Note: Some drawings may contain both Works Information and Site Information

Drawing number	Revision	Title
220-5400-001	A	Sub 2B Room Layout
220-5401-001	0	UPS DB GA
220-5402-001	A	Sub 2B MCC Panel GA
220-5450-001	B	Sub 2B Switchboard SLD
220-5450-002	A	UPS SLD
220-5751-001-RA	0	Emergency Panel Schematic
220-5752-001-RA	0	Incomer & Bus Coupler Schematic
220-5753-001-RA	0	RHS Schematic
220-5754-001-RA	0	LHS Schematic
220-6400-001	A	PLC GA
220-6475-001	A	Cable Block Diagrams

3.2 Contractor's Works Information

1 Work to be performed at Substation 2B:

1.1 LV Distribution Boards

- Remove all LV cables and busbars connected to the Switchboard.
- Removal of the current old LV Switchboard and store at ACSA storeroom for disposal preparation.
- Install the new LV Switchboard.
- Test LV cables.
- Connect and terminate LV cables.
- Perform all necessary tests.
- Commission.

1.2 Power Transformers

- The substation 2b switchboard is design to be connected with two two (2) 2MVA 11000/400V distribution transformers.
- There's currently one of the transformers is supplying power to the low voltage switchboard.
- The second transformer is currently stored outside Substation 14 at the airfield. It must be collected and installed at substation 2B.
- All transformer tests are to be conducted before it is switched ON.
- The Buchholtz, oil temperature, winding temperature alarms and trips, are to be wired to the 11kV transformer breaker panel and the over-pressure relief valve contacts for transformers 2 with 2.5mm² 12 core cable replacing the 7 core currently installed.
- The two existing distribution transformers 2MVA 11000/400V which will be provided by the Employer. These transformers will be installed in same transformer rooms.
- The Bidder is to note that a fire sprinkler system is installed and must be switched OFF during the installations.
- These systems are to remain in service once installations are done. If alterations to these systems are required, the Bidder is to include the cost thereof in his costs.
- As the substation cannot be isolated for an extended period, the replacement of the panels shall be conducted in phases as proposed by the bidder.

1.3 LV Overhead insulated busbars

- The 400V overhead insulated busbars will all be retained and will not be replaced for transformer 1 and 2.
- Flexible tails or extensions are to be installed between the existing busbars and the bushings of the new transformer 2.

1.4 Protection and control cables

- The following control cabling is to be installed, terminated, and connected. Before ordering cables, the correct cable schedules and block diagrams shall be approved by the Engineer.
 - a) One 2.5mm² 12 core cable from the 11kV panel to the transformer.
 - b) One 2.5mm² 7 core cable from transformer 11kV panel to the transformer LV board.

1.5 Interlocks

- The following interlock systems are to be implemented:
 - a) Interlocks between transformer main circuit breakers and bus coupling panel circuit breakers.

1.6 Earthing

- The following equipment is to be solidly earthed:
 - a) 11000/400V transformers (two separate earths)
 - b) 11kV power cables
 - c) LV power cables
 - d) LV Switchboard

C4: Site Information

C4.1: Information about the *site* at time of tender which may affect the work in this contract

The Works are located at OR Tambo International Airport, which is a restricted and access controlled area. It is crucial for the Contractor to note that OR Tambo International Airport is a National Key Point and governed as such. The contractor will have to adhere to all airport requirements regarding access control, security, fire, health and safety.

4.1.1 Access limitations

a. General

- The works is within the security area of the Airports Company South Africa (ACSA) and access to the site is governed by the terms and conditions laid down by ACSA Security Officials from time to time. The *Contractor* shall satisfy himself as to these terms and conditions.
- The *Contractor* shall liaise with the ACSA Security Staff in order to obtain access permits for his staff and vehicle, which will be working within the airport. Personnel and vehicles entering and leaving the site are subject to routine searches.
- The *Contractor* will have to obtain a “gate permit” from the *Project/Service Manager*, before materials and equipment can be removed from the site. The “gate permit” gives an itemized list of materials and equipment to be removed from site.
- The *Contractor* shall make his own assessment of, and shall allow in his rates for those access problems which may be encountered and no extra payment or claim of any kind will be allowed on account of difficulties of access to the Works.

b. Permits

- The Contractor shall ensure that he/she is, at all times, familiar with ACSA’s safety and security requirements relating to permits in order prevent work delay as a result thereof.
- This shall include the permit application process.
- The Contractor shall have no claim against ACSA in the event that a permit request is refused.
- The following table is not all inclusive, but is provided for illustration purposes:

Permit	Required by/for	Department
AVOP – Airside Vehicle Operator permit	All drivers of vehicles on airside	ACSA Safety
Airside Vehicle Permit	All vehicles that enter airside	ACSA Safety
Basement Parking permit	All vehicles allowed to enter the delivery basement	ACSA Parking
Personal permit	All persons employed on the airport	ACSA Security

Cell phone permit	All persons taking cell phones to airside	ACSA Security
Tools permit	All persons taking cell phones to airside	ACSA Security
Lap top permit	All persons taking lap top computers to airside	ACSA Security
Camera permit	All persons taking cameras or camera equipment to airside	ACSA Security
Hot Works Permit	All welding and/metal cutting work	ACSA Safety
Airside Projects/Works Permit	For All projects on the Airside	ACSA Airport Operations/Safety
Low /Medium Voltage Permit to Work	For all work on Substation, Distribution Boards and Cables	ACSA Electrical Maintenance

- Proof of having attended the airside induction training course is required for all personal permit applications.
- Persons applying for an AVOP must provide proof of having attended an AVOP course.
- Fees are levied for these courses. Fees are further levied for all permit renewals and refresher courses - where applicable.
- No work shall be done without a written permission in the form of a permit/works order, displayed on the wall or in a visible area in the work area.

c. Cell phones and two-way radios

- Use of cell phones on airside is **not** permitted unless the user is in possession of an appropriate Airport permit for the device.
- Cell phone permit issuing authority lies with the ACSA Security department.
- The Contractor will **not** be allowed to use two-way radios at the Airport unless these radios are of the type, model and frequency range as approved by the ACSA IT department.
- Approved radios may be arranged via said department - payment will be for the account of the Contractor.

4.1.2 Ground conditions in areas affected by work in this contract

There are no excavations activities in this project.

4.1.3 Hidden and other services within the site

There might be water and sewer pipes crossing under or above the substation. Also there are a lot of other cables going through the substation 5 to other substations and these must be treated as live cables. There are also communication cables connecting the substation with the other substations.

4.1.4 Details of existing buildings / facilities which *Contractor* is required to work on



The substation is an existing substation with working electrical equipment. Detailed single line drawings and room layout are available on request. The contractor is only required to work in the two substation mentioned on the scope of work.

4.1.5 Safety Management

- The *Contractor* must be registered with the Occupational Health and Safety Commission.
- The *Contractor* submits a Health and Safety Plan to the *Employer* for work to be performed.
- The Health and Safety plan must include a Risk Assessment of the activities with mitigating methods that will be used to prevent accidents.
- The Health and Safety plan must be implemented and monitored to ensure its integrity.
- Details of *Contractor's* appointed Health and Safety Committee members must be included and appointed in writing.
- The *Contractor* in writing must appoint all competent person/s.

ANNEXURE A : DETAIL TECHNICAL SPECIFICATION

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1. **REFERENCES**

2.1. The following publications (latest edition) are referred to herein:-

2.1.1. SOUTH AFRICAN BUREAU OF STANDARDS

Codes of Practice

SANS 064 The preparation of steel surfaces for coating

SANS 10111 Engineering Drawings.

SANS 10142 Wiring of premises Part 1: Low voltage installations

SANS 10313 Protection against lightning - Physical damage to structures and life hazard Specifications

SANS 60947 Low-voltage switchgear and control gear

SANS 156 Moulded-case circuit breakers

SANS 60269 Low-voltage fuses

SANS 1091 National colour standards for paint

SANS 1195 Busbars

SANS 1274 Coating applied by the powder coating process

SANS 1973-1 Low-voltage switchgear and control gear assemblies Part 1: Type-tested assemblies with stated deviations and a rated short-circuit withstand strength above 10 kA

SANS 1973-3 Low-voltage switchgear and control gear assemblies Part 3: Safety of assemblies with a rated prospective short-circuit current of up to and including 10 kA

SANS 60529 Degrees of protection provided by enclosures (IP Code)

SANS 1507 Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V)

SABS ISO 9000 Quality management systems -- Fundamentals and vocabulary

SANS 1019 Standard voltages, currents and insulation levels for electricity supply

SANS 170 Fasteners International Electrotechnical Commission

BS 3938 Current Transformers

IEC 61508 Functional Safety of Electrical/Electronic/Programmable Electronic Safety-related Systems.

IEC 60051 Direct acting indicating analogue electrical measuring instruments and their accessories

2. SERVICE CONDITIONS

3.1 The equipment shall be designed and rated for continuous operation under the following conditions: -

3.1.1 Ambient/Environment Conditions:

3.1.1.1 Ambient temperature- 5C to +40C (daily average +35 C).

3.1.1.2 Relative humidity- As high as 95%

3.1.1.3 Lightning conditions- Severe, with a maximum lightning ground flash density of eleven (11) flashes per km² per annum.

3.1.1.4 Atmosphere- Salt laden and corrosive industrial atmosphere

3.1.2 Electrical Conditions:

3.1.2.1 The system of supply shall be three phase, 4 wire, 50 Hz alternating current with solidly earthed neutral at a nominal voltage of 400 / 231 Volts.

3.1.2.2 The voltage may vary within the range of 95% to 105% of the nominal and all equipment installed shall be suitably rated.

3.1.2.3 All equipment shall be adequately rated for prospective fault level ratings.

3. SUPPLY OF MATERIAL

The onus is on the Contractor to order material well in advance to ensure timely delivery. No extension of time shall be allowed for late delivery of material due to orders not placed in time. As pointed out in relevant foregoing clauses and sections of this document, the Employer will supply the 11kV switchboards and 11kV/ 400V 2MVA transformers.

4. STANDARDS

In view of the fact that this installation is to be operated and maintained by ACSA it is a condition of this contract that the standard of workmanship and quality of materials will be subject to the approval of the Engineer and ACSA who are finally responsible for the operation and maintenance of the system. All correspondence in this regard shall however be directed to the Engineer and the final approval will only be granted by him.

5. OUTAGES

Power outages will be required to perform many of the tasks involved on this project. Outages are to be planned allowing sufficient notice to the Employer and in compliance

with any reasonable stipulations required. Liaison with the Engineer, Employer, other contractors and the supply authority is compulsory.

6. ITEMS FOR APPROVAL

Where the specification refers to a specific brand name or "similar and equivalent" or "Other approved type" and alternative equipment is offered in lieu of that specified then written approval must be obtained from the Engineer before such equipment is installed.

In certain cases, the contractor may be required to submit samples and where necessary, tests will be performed to establish the quality of the material offered.

7. OFF-LOADING, STACKING AND LIABILITY FOR BREAKAGES

The Contractor will be required, at his own expense, to make all arrangements for off-loading and carefully stacking all plant and materials delivered under this contract on the Site of the Works. The off-loading and stacking shall be carried out strictly in accordance with the requirements of the Engineer so as to permit a thorough and careful examination and testing of all items for breakages, fractures, etc.

Plant and materials shall be stored on site at the cost of the Contractor who shall be fully responsible for its protection against theft or damage by water, weather, fire and any other interference until such time as it is erected and installed, put into satisfactory operation and accepted by the Employer as complete.

8. STORAGE

Facilities for extended storage on site for plant and materials may not always be available and the contractor shall therefore make his own arrangements for any off-site storage, which may be required for plant, and materials, which become available before delivery to the Site and installation thereof can commence. No additional payment will be allowed for off-site storage.

9. SUPPLY TO REMAIN OPERATIVE

During the execution of this contract, the existing 11kV and 400V networks will remain in full operation. It is of the utmost importance that the Contractor shall make due allowance for the co-ordination of his program with the operation of the network.

Any anticipated delays or problems experienced with the execution of construction activities shall immediately be brought to the attention of the Engineer.

No standing time or extension of time will be allowed due to bad co-ordination and/or programming by the Contractor and should his action cause unplanned outages, then he will be accountable therefore.

10. DESIGN AND STANDARDISATION

All equipment offered shall be products of recognized and experienced manufacturers and shall be proven equipment of the same basic design and size similar to that which has been in successful continuous operation for at least three years preferably under similar climatic conditions. Proven plant reliability and high availability are of prime importance and the attention of the Bidder is drawn to these particular requirements.

All material used shall be of the best quality and of the class most suitable for working under the conditions specified and shall withstand the variations of temperature and atmospheric conditions arising under operating conditions without distortion or deterioration or the setting up of undue stresses in any part and also without affecting the strength and suitability of the various parts for the work which they have to perform. No welding, filling or plugging of defective parts will be permitted without the sanction in writing of the Engineer.

Corresponding parts liable to renewal shall be interchangeable. When required by the Engineer, the Contractor shall demonstrate this quality.

All apparatus shall operate without producing undue vibration and with the least practicable amount of noise.

Cast iron shall not be used for chambers of oil-filled apparatus or for any part of the equipment which is under over-pressure or subject to impact stresses except where it can be shown that service experience has been satisfactory with the grade of cast iron and the duty proposed.

Operating boxes, cubicles and similar enclosed compartments forming part of auxiliary equipment shall be adequately ventilated to restrict condensation, and suitable anti-condensation heaters shall be provided. All contactor and relay coils and other parts shall be suitably protected against corrosion.

All mechanisms shall, when necessary, be constructed of stainless steel, brass or gunmetal to prevent sticking due to rust or corrosion. All taper pins used in any mechanism shall be of the split type.

All rubbing or wearing surfaces shall be machine surfaced. Joints employing a gasket material shall be so constructed that the packing is maintained under sufficient compression in all parts so that an efficient joint can be made without the use of jointing compounds. Gasket material shall be of the minimum thickness necessary and of applicable composition for the site conditions.

All apparatus shall be designed to exclude vermin and insects from entering the equipment.

11. NUTS, BOLTS AND WASHERS

Nuts and bolts in metric sizes shall be used. Bolts and studs for electrical connections shall preferably be of brass M6 size. Alternatively size M5 may be used, but these must be of stainless steel, phosphor bronze or high tensile brass.

Nuts and pins shall be locked in position with lock nuts or lock washers, or other devices if approved. Lock washers shall not be used above M24 size except when a spring type is specially approved.

In steel constructions no bolt or stud shall project through its nut by more than approximately 10 mm or four threads whichever is the less, except for terminals and relay stems.

Bolts, nuts and washers on outdoor equipment shall be of non-corroding material where they are in contact with non-ferrous parts in conductor clamps and fittings and elsewhere if specially required.

Suitable special spanners shall be provided for bolts and nuts which are not properly accessible by means of an ordinary spanner. All steel bolts of any one diameter on a structure shall be of the one grade of steel.

12. TOOLS

The Contractor shall supply in lockable boxes, for the Employer's use, all special tools that may be required for assembly, dismantling and adjustments to the equipment. The tools shall be unused and in new condition at the time of handover.

13. PACKING OF MATERIAL

Packing shall give adequate protection to the enclosed materials against mechanical damage during transport to its final destination, including rough handling during sea, rail and road transport and transition from one mode of transport to another.

Packing should preferably be stout close-boarded wooden cases of adequate thickness, suitably braced and banded and lined internally with water resistant material. Cases transported or stored on open decks shall be roofed with asphalted felt.

Certain types of outdoor equipment may be crated, provided that adequate protection of vulnerable parts is assured. All pipe flanges shall be fitted with wooden covers not less than 40 mm larger in diameter than the flange.

Steelwork sections and similar items may be bundled provided that the ends are adequately protected and the enclosing bands or wires are robust.

Indoor electrical equipment must be enclosed in welded polythene envelopes inside

packing cases and the envelopes shall be evacuated or have a desiccant inside.

All items in cases or crates shall be secured so that they are not free to move and cannot work loose in transport. If rotating parts are shipped within their bearings or mountings, they must be adequately braced and restrained to prevent relative movement. Loose items shall be placed in bags in a case, each bag having stitched onto it a metal label indicating the number and nature of its contents. Where a filler material is used in a case to restrict movement or provide additional protection it shall be non-hygroscopic.

All surfaces liable to corrosion shall be thoroughly cleaned and special steps adapted to the nature of the materials and the time interval between packing and unpacking shall be taken to prevent corrosion.

Steps shall be taken to ensure that insulated materials cannot be damaged by moisture, moulds, insects or rodents. Items that include materials liable to be damaged by moisture shall be packed in hermetically sealed containers in which silica gel, or some other approved desiccant has been inserted.

14. ABANDONING AND CLEARING OF SITE

The stage encompasses the following and it should be noted that the actions detailed below are required for the substation to be taken over by the Employer:

- (b) The final handing over of the works to the ACSA, together with all marked up "Record" drawings, all spares included in this contract and all auxiliary equipment required for the operation of the works.
- (b) Three copies of the complete instruction manuals and drawings for the operation and maintenance of the equipment shall be handed over to the Engineer. A CD will also be handed over containing the manuals and drawings and all setting files and equipment software packages.
- (c) The operation of all the equipment supplied under this contract shall be demonstrated at length to the local maintenance personnel.
- (d) All spares should be properly packaged and labelled and should be handed over to ACSA or his representative and signed confirmation of receipt thereof, obtained.
- (e) It should be noted that this contract will not be regarded as complete until this stage of the works has been adequately finalised.

- (f) The attendance of the final inspection on completion and prior to handing over of the works.
- (g) Removal of the site office and store, if erected and disconnection of any temporary service utilized.
- (h) The site shall be cleaned and any excess material waste, refuse and rubble resulting from the construction activities removed and any damage incurred made good.

13. LOW VOLTAGE DISTRIBUTION BOARDS, SWITCHBOARDS AND CONTROL PANELS SWITCHGEAR

13.1 GENERAL

This specification provides for the design, manufacture, delivery, installation, testing and commissioning of low and medium-voltage distribution boards for voltages up to 660V AC and 500V DC.

Low voltage distribution boards, switchboards and control panels shall be provided and installed as indicated on the drawings and as specified in the specification and schedules.

Distribution and switchboards offered must comply with these specifications, the drawings and schedules and shall comply with the relevant parts of SANS 1180 (Electrical Distribution Boards).

As it is not intended to penalise a Contractor on account of distribution boards offered, it is essential that the costs of all distribution boards be indicated in the Schedules in order to facilitate the determination of costs of alternatives.

The Contractor shall note the dimensions of the rooms or openings in which the panels will be mounted and also the dimensions of the access routes and doors. Panels shall be so constructed that they may be taken through the doors after doors have been placed in position.

The Contractor shall level, fix all distribution boards to the satisfaction of the Engineer.

The Contractor shall note sizes and positions of cable trenches and vertical shafts and shall include in his tender all supporting steel work to straddle trenches and vertical shafts to support distribution boards securely.

13.2 STANDARDS AND PROTECTION

Equipment shall be in accordance with the applicable SABS specifications and Codes and with this Specification.

Selection of materials, finishes, equipment, etc shall also be based on the conditions where the boards and equipment are to be installed, e.g. corrosive, hot, wet, damp, dusty, etc.

Boards, equipment and materials which are exposed to sunlight shall be coated with a UV resistant surface finish.

13.3 CONSTRUCTION AND FINISHES

13.3.1 General

The type of board (i.e. flush, surface, floor standing) and position is described in detail in the drawings and/or in the Schedules of Particulars. Boards shall be constructed as indicated on the relevant general arrangement drawings, if applicable.

All boards shall be installed at the specified height, with the top edge of the tray not exceeding 2000mm above finished floor level.

Lifting eyes shall be provided on large boards and shall be manufactured in modular sections so that they may be easily transported and then assembled in position on site.

Cables and conduit entry is to be as indicated on drawings or as required by their locations.

Glanding and terminating cubicles and busbar chambers are to have screwed or bolted covers. Quick release covers will not be acceptable.

The gauge of the metal shall be suitable for the size of board and construction employed. Suitable bracing shall be employed to ensure adequate stiffness of panels, etc.

Barriers running the full height and depth of each board shall be provided between adjacent panels.

13.3.2 Gland Plates for Cables

A suitable gland plate shall be provided in the cable glanding compartment of each tier of the board.

Gland plates shall be bolted down in sections not wider than 600mm and have a minimum thickness of 3mm. Any gland plate shall be removable without interfering with the adjoining gland plates.

Gland plates shall be a minimum of 400mm from cable terminals.

Where cable gland plates are drilled or punched on site for cable entry, the gland plates shall be straightened if deformed during these operations.

Gland plates must be positioned to suit cable entry and termination.

A cabling through or duct shall be provided from the glanding compartment to each cubicle or piece of equipment to allow for the running of the cables, both power and control.

All wiring, connections, instruments and other equipment shall be mounted inside the board and not on the outside, unless otherwise specified. Wood or artificial wood products shall not be used inside switchboards as mounting for terminals or partitions. Sidanyo, Delaron, or equal not less than 6mm thick, or other materials as prescribed or approved by the Engineer shall be used.

Space for 30% future expansion on mccb's and CFS units and 50% future expansion on contactors, time switches and isolators shall be allowed on all boards in addition to any spare accommodation indicated on the diagrams unless otherwise specified.

13.3.3 **Free-standing Boards**

Free-standing boards shall be of the free-standing pedestal type with or without doors as specified and shall be so designed as to enable the boards to be extended without undue difficulty.

Boards shall comply with BS 5486 : 1977 (Factory Built Assemblies of Low Voltage Switchgear).

The boards shall be constructed of minimum 1,6mm sheet steel suitably stiffened and reinforced by a 2mm sheet metal framework and shall be complete with all equipment, internal wiring and labelling.

13.3.4 **Flush and Surface-mounted Boards**

Both flush and surface-mounted boards shall consist of an architrave frame which shall carry the chassis for equipment, panel and door and a bonding tray onto which the architrave frame shall be secured.

Distribution boards shall comply with SANS 1180: Part I and II as applicable.

Bonding trays for flush-mounted boards shall be designed to be built into the wall, shall have expanded metal spot-welded to the rear and sufficient metal straps on the sides and shall be strong enough to carry the weight of the wall above it.
The tray shall be galvanised.

13.3.5 **Weather-proof Construction**

Weather-proof construction shall be effected by double-turn construction of the architraves with flanged doors and bolt-on panels.

13.3.6 **Extendibility**

The boards shall be extendible and have an initial spare cubicle capacity of 10% or as specified on the drawings.

13.3.7 **Standby Power Section**

The section of a board accommodating circuits on a standby supply shall be mechanically and electrically separated from the normal section.

All panels associated with the standby section shall be clearly labelled and identified, and shall be painted as specified on the drawings.

Sufficient removable panels shall be provided to afford access to all equipment for maintenance, service and replacement purposes.

The back panels where specified shall be of similar construction to the front panels.

13.3.8 **Clearances**

Sufficient space shall be left inside panels for incoming and outgoing cable connections and for interconnections and control wiring, taking into account the sizes and quantities of cables and wires involved.

Equipment on boards may be installed butting. Undue cramping of equipment and wiring shall, however, not be permitted and the following minimum clearances must be maintained:

- Clearance of not less than 75mm between sides, top and bottom of architrave and any equipment mounted on the chassis.
- Clearance of not less than 75mm between rows of equipment (measured between terminals).

13.3.9 **Doors**

Doors shall be provided as required and prescribed. Where doors of sheet steel finished in the colour specified are required, they shall be manufactured of the same gauge material as the remainder of the panels.

Doors shall be suitably braced to ensure stiffness and shall have smooth, flat finish.

Door hinges shall be heavy-duty and shall be constructed to permit easy removal of doors. Piano hinges are not acceptable.

Where hinges are used they shall preferably be concealed. If a surface mounted hinge is used it shall be chromium plated. Provision shall be made for adjustment of hinges to facilitate lining up of distorted doors.

Locks shall be Yale type and shall have master key facilities for the entire installation and separate key facilities for each board. Two individual keys shall be provided with each board and four master keys shall be provided for the entire installation.

Doors shall be fitted with approved handles and spring-loaded catches without locks where specified.

Doors shall be fitted with approved handles and square key locks where specified.

13.3.10 **Removable panels**

Panels of sheet steel, finished in the colour specified, shall be suitably finished, with machine-punched slots to allow for flush mounting of equipment.

13.3.11 **Dust and Vermin Proofing**

All boards shall be completely vermin proofed.

No holes other than those required for cable or conduit entry shall be allowed. Should extra holes be required for temporary installations, these holes shall be suitably blocked off on the removal of these temporary installations.

Where doors or removable covers are situated and are required to be dustproofed, they shall be dustproofed by means of a minimum 10mm thick non-perishable gasket, resistant to deterioration from heat, chemicals and moisture and capable of being compressed to half its original thickness.

- Where doors are flush fitting, gaskets shall be glued to the fixed flange.

- In the case of projecting doors, gaskets shall be glued to the door and not the associated framework.
- Similarly suitable gaskets shall be used wherever push-buttons, indicator lights, isolator handles, etc. pass through a door or panel.

Switchgear shall be vermin-proof both in the service and isolated positions.

13.3.12 **Ventilation**

Boards fitted with heat generating equipment shall be arranged to prevent heat building up to a temperature which could damage any of the equipment or cabling on the board.

13.3.13 **Painting and Protection**

The interior of all board and panel cases shall be finished in any one of the following finishes as specified or as approved.

13.3.14 **Labelling**

All statutory safety warning notices shall be in both the official languages.

All boards shall be labelled as shown on the drawings and approved.

Black letters on white background shall be used for all normal labels and red letters on white or yellow background for danger notices.

The main isolating switch or switches shall be clearly labelled in accordance with the regulations.

Size and origin of supply cables and busbars shall be clearly labelled on all boards.

All grouped single, double and three pole circuit breakers on distribution boards shall be properly labelled, indicating number of circuit controlled.

All equipment situated inside the board, e.g. contactors, relays, fuses, timers and time switches shall be clearly marked, indicating function, circuit controlled and fuse rating.

The board designation label shall be fitted at the top centre of the board. Individual labels are to be fitted to each compartment door and corresponding fixed portion of rear panel (if accessible).

All circuit labels shall be the same size for boards or similar equipment supplied under this Contract.

Labels shall be white/black/white composition engraved traffolite secured by self-tapping screws or channelling.

Letter size: Main label - 20 mm, other labels - 6 mm.

Labels on power cables shall be attached with approved type plastic adjustable clips.

The labels for power cables shall be provided with holes for the clips to pass through for fastening. Each power cable label shall be fastened with at least two clips.

A legend card, covered by removable 2mm thick transparent acrylic plastic ("PERSPEX") or equivalent panel, shall be installed on the inside of the door of the boards or cubicles and circuits shall be designated on this card.

Accessories

Any special door keys (in duplicate), special tools, slinging eye bolts and foundation bolts, shall be supplied with each board.

13.4 **WIRING AND EQUIPMENT REQUIREMENTS**

13.4.1 **General**

Switchgear, control gear, motor control gear, etc. shall be positioned and installed as indicated on the relevant drawings or as approved.

The gear shall be installed so that it is positioned squarely on its supporting steelwork, i.e. "lined up" in both the vertical and horizontal planes.

All auxiliaries (relays, timers, etc.) shall be mounted in the same cubicle as their associated motor starter.

All motor ammeters shall have a suitable overload scale to cater for motor starting currents. The motor full load value shall be indicated by a red line on the scale.

Each main incomer shall be equipped with ammeters, voltmeters and selector switches as specified on the drawings.

All equipment contained within the switchboards shall be designed to operate continuously at its maximum specified rating under the stated service and atmosphere conditions.

13.4.2 Interchangeability of Equipment

Similar and equivalent equipment and auxiliary equipment shall be identical and interchangeable in all respects. It shall be possible to replace any equipment with any similar and equivalent equipment under this Contract.

Where any specific type and make of equipment is used, the whole of this Contract shall be carried out with that specific make and type of equipment to ensure uniformity of appearance and complete interchange ability.

13.4.3 Busbars

Busbars shall be installed in all boards and may be installed either horizontally or vertically and in main boards shall be run in a separate compartment, isolated from the rest of the board.

All terminations onto busbars and interconnections shall be bolted with cadmium-plated high tensile bolts, washers, spring washers and nuts. Spacing of busbars shall be calculated in accordance with SANS 784, but shall not be less than 50mm.

Busbars shall be mounted on substantial porcelain or other approved insulators. Bare conductors must be so spaced that with all clamps, lugs and lead-offs in position, the spacing between any conductor and earth shall not be less than 40mm.

Connections to the busbars must be effected by means of the correct clamps or lugs with soldered connections or with connections crimped with the correct equipment.

Busbars shall each be identified by means of 100mm long painted (or other approved) phase colouring bands spaced not more than 300mm apart. The following colours shall be used:

Number of Phases	Phase Colour	Neutral Colour	Earth Colour	Special Purpose Colour
1	Red	Black	Green/Yellow	Orange
2	Red and White	Black	Green/Yellow	Orange
3	Red, White and Blue	Black	Green/Yellow	Orange

Where busbars are mounted horizontally the longer dimension shall be in the vertical plane. The busbars shall be designed to withstand the mechanical and thermal stresses of any possible short-circuit that could occur at that point in the system.

Rating of busbars shall not exceed 1.55A/mm² for copper and 1.0A/mm² for aluminium.

A solid copper earth bar with sufficient ways for all the earth conductors and 50% spare space shall be provided in an easily accessible position near the cable gland tray.

Where small leads are connected directly onto the busbars, such as voltmeters, fuses, etc., they shall be provided with a 20 ampere fuse mounted at the busbar and a 2 ampere at the piece of equipment.

Busbar chambers and droppers shall be segregated from each other. Also busbars shall be completely screened from any other compartment by removable bolted covers. Furthermore, the busbar supports shall divide the busbar chamber into discrete sections.

All busbar contact surfaces shall be tinned.

All bracing and other insulating material shall be non-hydroscopic.

Droppers from the busbars to the terminals of fuses or isolators must be of adequate section for the maximum rating of the isolator irrespective of the circuit rating. Colour coding will be as for main busbars. All droppers shall be fully insulated.

13.4.4 **Wiring**

All internal wiring to the boards shall be carried out in PVC insulated to SANS 150 having a minimum of 7 strands per conductor, 660/1000 volt graded and colour coded to BS 158.

All terminals used shall be in accordance with the relevant clause of this specification.

All wiring shall be neatly grouped and laced. Wiring shall not be run at random but shall follow board construction features as far as is possible.

Only wires of the same phase shall be grouped or bunched together.

No excessive bunching of wiring, which will impair the current carrying capacity will be accepted.

All wiring is to be kept free and away from any exposed terminals or other un-insulated current carrying parts.

No joints will be allowed in internal wiring, and all connections to busbars or earth bars shall be made with tinned copper cable lugs soldered or crimped to the ends of the conductors and bolted to busbars by means of cadmium-plated high tensile steel bolts and nuts provided with spring washers.

Connections to terminals shall suit the connectors used, but in any case terminal clamp screws shall not bear directly on the conductor.

Crimp lugs or ferrules shall be used on all conductors exceeding 10mm².

Wiring of any one cubicle shall not run through other cubicles unless the wiring is run in conduit or ducting.

Wires shall be clearly marked at all termination points in accordance with the numbering of the wiring diagram, by means of numbered ferrules, or other approved method.

When the board main switch is switched off, no live incoming or other wiring shall be accessible. The incoming terminals must be screened. Where connections are taken from the incoming side of the main switch, they shall be covered by a screen marked "isolate Feeder before Removing Screen". If any circuits are energised from other sources, clear warning notices to that effect shall be fixed and such terminals shall be clearly marked.

Control circuit wiring shall be run in PVC trunking where feasible and elsewhere in a strapped harness with sufficient slack at panel doors. PVC trunking with slotted sides shall be used.

Where control circuits are interlocked for sequence control the interlocking circuits shall be made through auxiliary contacts on the circuit isolator to prevent live feedback in panels that are isolated.

13.4.5 **Lamp Test Circuits**

A lamp test circuit shall be provided for each board if specified.

13.4.6 **Alarm Circuits**

Wiring to the numbered terminal strip shall be provided as indicated on the drawings or as specified for remote alarm and indication functions.

13.4.7 **Earthing**

All boards shall be fitted with earth bars.

Free-standing boards shall be fitted with a continuous full length earth busbar.

All sections of the board and all equipment on it shall be earthed.

Hinged doors having electrical equipment mounted on them shall be earthed to the board by means of a flexible earth strap.

13.4.8 **Terminals**

Terminal assemblies shall consist of a metal mounting rail onto which terminal modules are fixed.

For cables up to and including 10mm², clamp type terminals may be provided, but the type where the clamp screws bear directly on the conductor will not be accepted.

For conductors exceeding 10mm², terminal modules suitable for crimping lugs or ferrules shall be used.

Terminal modules shall have rigid insulating barriers between poles to provide an adequate creepage path for use at 440V between adjacent poles for 380V application.

The terminals of the modules shall be large enough to accommodate the cable sizes specified.

All terminals shall be clearly marked in accordance with the working drawings and wiring diagrams and as approved.

Additional spare terminals shall also be provided as specified or indicated on the drawings for the purpose of looping additional remote circuits, with a minimum of 20%.

13.4.9 **Lightning Arresters**

Lightning arresters shall conform to SABS 171, shall bear the SABS mark, and shall be solidly earthed directly onto the main earth bar by means of a copper strap.

13.4.10 **Workshop Drawings**

Workshop drawings indicating the following shall be approved by the Engineer before manufacture commences:

Boards - General

- (a) Front, side and back elevations of the boards
- (b) Typical sections through the boards
- (c) Construction details
- (d) Dimensions and construction details of board
- (e) Colour of board sections

- (f) Placing of switchgear on boards
- (g) Detail and position of legend card holder
- (h) Details and position of schematic drawing holder
- (i) Wording, position, size and colours of name strips and notices
- (j) Assembly and holding down details of each board
- (k) Full schematic wiring diagrams showing terminal wire and component numbers and circuit designations.

Busbars

- (a) Current rating
- (b) Fault current rating
- (c) Positions and spacings of busbars and access to busbars
- (d) Dimensions of busbars
- (e) Details, positions and spacing of supports
- (f) Type of material of busbars and supports
- (g) Busbar identification

Switchgear

- (a) Minimum fault capacity of switchgear
- (b) Type and manufacture of switchgear used
- (c) Current and voltage transformer ratio and V A-ratings

Meters

- (a) Maximum capacity of meter in A, V, kWh, etc.
- (b) Type and manufacture of meter
- (c) Full scale of meter

(d) Multiplication factor, if applicable.

All wiring diagrams and symbols used shall be in accordance with DIN or other approved and nationally or internationally acceptable Standards.

As-Built Drawings and Manuals

1. Instruction manual shall be complete with all relevant drawings to enable the switchgear, relays and other equipment to be dismantled and serviced, including:
 - (a) Descriptive pamphlets for each contactor, switch, isolator, fuse, fuse switch, timer, relay etc. installed.
 - (b) Names and addresses of suppliers and manufacturers of the equipment installed.
 - (c) Type test data for equipment installed.

One print of the drawing relevant to a board shall be placed in a plastic holder in the board or, where specified, mounted framed behind glass on a wall near the board.

13.4.11 Installation and Erection

The boards shall be properly fixed to the floors or supporting steelwork.

The Contractor shall note sizes and positions of cable trenches and vertical shafts and shall include in his tender all supporting steelwork to straddle trenches and vertical shafts to support boards securely.

Steelwork supporting the switchgear shall be installed and positioned as indicated on the relevant drawings or as approved. The steelwork shall be painted as specified before the gear is installed. No gear shall be installed until the steelwork has been formally inspected and approved by the Engineer.

The prices for the erection of distribution boards shall include the making off and terminating of all cables and wires unless these are separately indicated for pricing.

The boards shall be properly earthed to the substation and/or building earthing system.

When aluminium core cables are used, suitable tinned copper or aluminium lugs with Densal paste shall be used for the terminations.

The Contractor will be required to balance the load as equally as possible across multiphase supplies. Balancing of loads across the three phases must be finally approved by the Engineer after commissioning.

The costs for the supply and delivery of the erection tools, materials, equipment and consumables shall form part of the price for the erection of the boards.

All board finishes shall be made good to the satisfaction of the Engineer before final handover.

13.4.12 **Inspections, Tests and Commissioning**

Each board and its components shall be subjected at the Manufacturer's works to the routine tests, called for in the appropriate SABS and BS Specifications and this Specification.

The following tests shall be performed on all circuits:

- (a) Full operational tests of opening and closing each circuit breaker and the contactor from their respective protection relays and control devices inclusive of sequence controls where required.
- (b) Pressure tests between phases and between phases and earth.
- (c) Primary injection test of all protective relays.
- (d) Secondary injection test of motor overload devices.
- (e) Pressure test of all secondary wiring at 2kV for one minute.
- (f) Polarity tests of current.

Works testing will be conducted by the Employer.

14. DELIVERY OF SWITCHBOARDS TO THE SWITCH ROOMS

- (a) After acceptance by the Engineer of the switchboard in the manufacturer's works, the equipment will be disassembled, packed, loaded, transported and delivered to the Employer's storage site by the Supplier.
- (b) The successful Bidder is to collect the switch board panels from the Employer's storage site. The collection date shall be finalised with the Engineer to ensure that the panels can be off-loaded directly into the switch room and great care shall be taken during loading and transport to ensure that the board and components are properly protected.
- (c) In the case of damage to the switchboard, relays or any parts thereof, they shall be returned to the works for rectification at the contractor's cost.

15. ERECTION OF SWITCHBOARD

This section of the works entails the moving into position and assembly of the panels in the substations to extend the existing board or form the new 11 kV switchboard. Furthermore this section of the works will include the final site testing to prove that the functioning of the equipment has not been impaired by the disassembly, transport and erection on site.

As this board replace an existing switchboard, the installation of the new board will be done in phase as detailed in the Scope of Work.

Only personnel approved by the manufacturer of the switchboard will install the new switchboard.

16. LOW VOLTAGE MOULDED CASE CIRCUIT BREAKERS (MCCB'S) AND ISOLATORS

All moulded case circuit breakers shall comply with SANS 156. All MCCB's shall be of flush panel mounting type with inverse current time delay overload characteristics and instantaneous short circuit characteristics. MCCB's shall have hydraulic/magnetic or thermal/magnetic overcurrent releases.

Single-pole circuit breakers used as double or triple-pole circuit breakers are not acceptable unless overload releases are internally coupled.

MCCB's shall be selected for the fault rating at the point of installations, but with fault ratings of 5 kA or less, MCCB's of fault current interrupting rating of 5 kA shall be installed. Smaller fault ratings will not be accepted.

Neutral bars associated with each bank of MCCB's shall be positioned below each bank and shall be wired in the same sequence as the MCCB's above.

Where spare space for MCCB's are called for, dummy MCCB's shall be used and not blank-off covers.

18.1 **MOULDED CASE ISOLATORS**

All isolators shall be of the "load, break, fault make" type, and shall be fitted with a green operating lever (or other approved colour) to distinguish isolators from circuit breakers.

18.2 **EARTH LEAKAGE PROTECTION UNITS (Up to 100A)**

All earth leakage relays shall comply with SANS 767 (Earth leakage Protection Units) Part I. The sensitivity of units shall be as specified in the Project Specification.

17. **PANEL MOUNTED SWITCHES AND SELECTOR SWITCHES (For control and metering function)**

All switches and selector switches shall be capable of breaking the full load and closing onto a full system fault.

Voltmeter selector switches for a three-phase 50 Hz system must be so arranged that voltages between phases and phases to neutral, can be read, (including OFF), must be of the break-before-make type, must be fitted with a switch position plate on the panel face. Positions must be suitable for panel mounting with indicating plate.

Ammeter selector switches shall be of the make-before-break type with one "off" and three "metering" positions. When in the "off" position the metering circuits shall be connected to suitable burden resistors.

The voltmeter or ammeter selector switch shall be mounted directly adjacent to the associated meters.

18. **TIME SWITCHES**

The contacts shall be silver-to-silver or other approved contacts rated at 20 ampere with a reserve of 8 hours minimum.

All time switches to be daily programmable with minimum 3 x 30 minute minimum duration variable "on" and "off" contact segments.

The whole mechanism is to be totally enclosed.

Type 1

A suitable 24-hour night and day astronomical dial with hour indicator and two adjustable strikers, one "off" and one "on" controlling one set of changeover contacts, must be provided, except where otherwise specified.

Time switches shall be provided with "day off" facilities.

Type 2

Type 2 time switches shall be similar to Type 1 specified above, but without the astronomical dial. Still with "day off" facilities, however.

Type 3

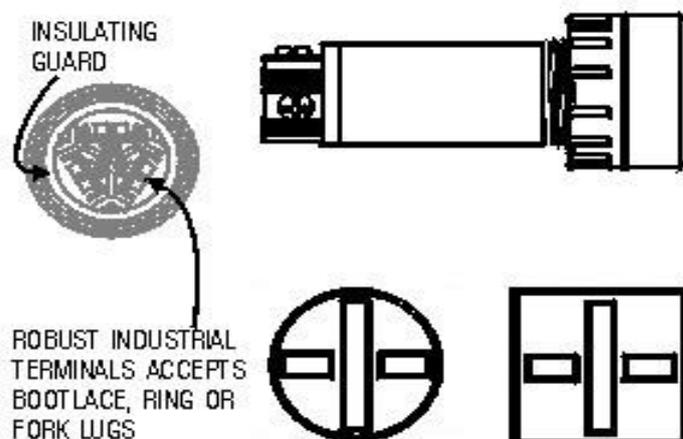
Type 3 shall be similar to Type 2 specified above, but without "weekend off" facilities.

Type 4

Moulded case type suitable for rail mounting in a distribution board and shall be equal to that manufactured by Heineman of Fuchs.

19. INDICATOR LAMPS

All indicating lamps and lamp holder assemblies shall be suitable for continuous operation at the maximum site ambient temperature. The LED type with more than one LED will be preferred (See figure below).



To reduce heating and fouling of the panels, lamps, which are continuously alight, shall have the minimum consumption consistent with the good visibility of indications in a

brightly-lit room.

Colours of indicator lights shall be in accordance with in VDE 0113/12.73 and IEC Publication 204: 1965.

20. PANEL TYPE INDICATING INSTRUMENTS

All instruments shall comply with the requirements of BS 89 for instruments of industrial grade accuracy and of the 96mm square flush mounted type.

Multi-function display meters shall be provided that display voltage, current, apparent power, real power, reactive power, power factor and energy. Current inputs shall be 5 or 6 ampere instruments or as approved.

The meter shall provide maximum demand registering, having an integrating lag of 15 minutes and instantaneous indication for all parameters.

Ammeter scales shall be direct reading with a full-scale read-out corresponding to approximately 120% of the rated circuit current. Full load rating shall be indicated with a red line on the scale plate.

Each parameter shall be marked with the appropriate phase to which it is displaying mounted in groups of three in a horizontal line.

The instrument shall be fitted with a RS485 port for simultaneous remote monitoring of all parameters.

21. LV CURRENT TRANSFORMERS

Current transformers for the LV switchgear shall be of the ring type for load currents of 50 A and larger, with the primary wound type for applications smaller than 50 A. All CT's shall comply with the requirements of BS 3938 of 1973.

Current transformers for indication circuits shall be Class 1 rated in accordance with BS 3938 of 1973 dependent upon primary current. For metering applications up to primary current 200 ampere use Class 1; 200-600 ampere use Class 0,5 and 600 ampere and above use Class 0,2.

The current transformer for all outgoing circuits shall have a suitable VA-rating to match the VA-rating of the circuit.

Each current transformer shall be provided with a robust mounting bracket and proper terminal studs on the circumference of the coil for the connections.

A name plate shall be fixed to each current transformer on the circumference of the coil in such a position that it can be easily read from outside the board after removal of

the access panels. The name plate shall clearly indicate class, rating, ratio and the function of the current transformers.

The current transformers shall be mounted on rigid supports, or fixed securely to busbars. If fixed direct to busbars, the busbar must be provided with a short removable segment to facilitate future replacement.

All current transformers shall be earthed through a removable earth link.

22. LV CABLES AND ACCESSORIES (600/1000V Rating)

24.1 POLYVINYL CHLORIDE PVC INSULATED CABLES AND CORDS COMPLYING WITH SANS 150

All low voltage cables shall be PVC insulated with steel wire armouring or strip aluminium armouring, as specified, and served overall with a final layer of polyvinyl chloride.

All cables shall bear the SABS mark.

The cores shall be stranded copper or solid shaped aluminium.

The cables with stranded copper cores shall be armoured with single steel wire armouring, unless otherwise specified.

The cables with solid aluminium cores shall be armoured with strip aluminium armouring.

Cable ends shall be made off in glands as prescribed by the manufacturers of the correct size and complete with neoprene shrouds. The armouring shall be clamped between substantial tapered bushes secured by lock nuts and properly earthed.

24.2 MINERAL-INSULATED COPPER AND ALUMINIUM-SHEATHED CABLES

Mineral-insulated aluminium- or copper-sheathed cables shall comply with BS 6207.

These cables shall be provided with a substantial copper or aluminium sheath. The insulation shall be suitable for continuous duty at 250°C up to 660 volts. Seals shall be rated for continuous duty at 105°C unless otherwise specified.

Cables shall be completely moisture proof and shall be able to withstand a voltage peak of not less than 3 kV.

Where the mineral insulation is hygroscopic it shall be possible to dry out cable ends by means of a blow lamp without damage to the cable. Cable ends shall be provided with effective sealing glands.

All accessories associated with mineral-insulated cables shall match the cable size and shall conform to the manufacturer's specification.

Correct tools as specified by the manufacturer must be used in the installation work of mineral-insulated cables.

Only seamless sheath cables shall be used and tails at cable ends shall be insulated with neoprene insulating sleeves.

Where copper or tinned copper earth wires are soldered to aluminium sheaths the joints shall be protected by means of bitumen or other suitable paint.

24.3 **ALUMINIUM SHEATHED CABLE**

This type of cable is to be equal to "Surfix" manufactured by ASEA. The UV resistant type must be supplied for outdoor applications.

24.4 **INSTALLATION OF CABLES**

24.4.1 **Surface and on Cable Trays**

Cables shall always be laid in a workmanlike fashion according to generally accepted standards and shall be installed as specified and as prescribed in the Wiring Code of Practice.

Cables shall be fixed and supported by means of Pressure shoe and screw type clamping devices (which shall not damage the cable) and shall never be laid over any sharp edges without suitable protection against damage.

No cable shall be bent to a radius of less than that specified in the Wiring Code of Practice or by the manufacturer as relevant.

Notwithstanding the above, all cable clamping devices must be as Approved.

Cables to be marked on both ends and joints to correspond with the wiring diagrams with "Critchley K-type" cable markers or metal bands with embossed lettering. The Critchley carrier strip is to be long enough to hold 9 digits unless otherwise specified.

24.4.2 **Cables in Ducts**

Cables in specially made concrete or other ducts or trenches shall be laid to the same standards and requirements as specified in "Cables - General" and "Underground cables". Cables in ducts shall be firmly fixed to the bottom or sides of the duct, to ensure that the cables will remain straight and parallel as installed. Cables shall not lie on top of one another.

24.4.3 **Cables on Cable Racks and Trays**

Cables on cable racks or cable trays shall be laid to the same standards and requirements as specified in "Cables - General".

24.4.4 **Cables in Vertical Riser Ducts**

Cables in vertical riser ducts shall be secured with proper cable clamps or cleats and pressure shoes.

In rising ducts cable supports equal to Sankeystrut P2000 channels shall be installed and the cables shall be fixed to these channels by means of clamps similar to Sankeystrut K series.

Where the channel is damaged or cut, filed or shaped, the affected portion shall be given a coat of red lead or other anticorrosive paint. All painting must be complete before the running of cables.

24.4.5 **Cable Clamps**

All cable clamps used for securing of cables shall be subject to the approval of the Engineer.

24.4.6 **Termination/Ends**

Cable terminations throughout the system shall follow the same phase rotation and colour code.

Densil paste shall be used at all aluminium core cable connections.

Aluminium cables shall not be directly connected to copper cables, terminals, busbars, etc. Tinned lugs and finings suitable for connecting aluminium to copper shall be used. The costs for the supply of lugs, terminals and all other fittings shall be included in the prices for the installation of cables.

24.4.7 Low voltage cables shall be terminated by the following methods:

Clamps

One piece cable clamps with rear pressure shoes mounted on Unistrut P4000 bar can be used to clamp the cables. The armouring shall be bolted to earth bars by means of suitable lugs.

Glands

Steel wire armoured cable ends shall be made off in glands as prescribed by the manufacturers, of correct size and complete with neoprene shrouds. The armouring shall be clamped between substantial tapered cones which form an integral part of the gland, secured by lock nuts to give a proper earth connection.

Glands shall be used for all cables to be terminated outdoors, with neoprene shrouds and suitable heat-shrink covers. Where the cable enters an outdoor box the gland shall be provided with a neoprene washer to seal off the hole.

Compression Glands

Compression type glands shall be used where specified, for armoured cables where the armouring can be taken through the gland to be bolted to an earth bar.

Cable ends shall be made off in compression type glands as prescribed by the manufacturers, of correct size and complete with neoprene shrouds.

The armouring together with the cable cores shall be brought through the gland and the cable shall be properly clamped by means of cable gland neoprene rings.

The armouring of the cable shall be connected to an earth bar by means of a suitable tinned cable ring. The compression type gland shall be used for all Strip Aluminium Armoured Cables.

Cable ends shall be long enough for the making off of cable ends into cable through joint boxes and/or cable end boxes. Excessive waste shall be avoided by the Contractor.

24.4.8 Jointing

Joints in PVC insulated cables shall be made using proprietary jointing kits of the resin cast type, the jointing being executed exactly in accordance with the joint kit manufacturer's instructions.

Conductors shall be jointed by Compression type Ferrules.

Bimetal Ferrules shall be used for jointing Al to Cu conductors.

24.5 **AS-BUILT DRAWINGS**

The Contractor shall hand over as-built drawings of cable routes indicating at least the following information:

- Exact and dimensioned positions of all cable joints and cable markers
- Exact and dimensioned positions of cables
- Exact positions, number and type of road, drainage channel and railway crossing Pipes
- Any other important information and dimensions.

If the Contractor cannot provide as-built drawings for cable routes, then the Engineer will arrange re-excavation to determine the positions of cables, joints, etc. All costs for the re-excavations to determine and record the positions of the cables will be recovered against the Contract Amount.

24.6 **LAYING OF CABLES AND EXCAVATIONS**

24.6.1 **Handling**

The storage, transportation, handling and laying of cables shall be according to first class practice, and the contractor shall have adequate and suitable equipment and labour to ensure that no damage is done to cables during such operations. Twisted, kinked or cables damaged in any way will be rejected.

Cable shall be removed from the drum in such a way that no twisting, tension or mechanical damage is caused, and must be adequately supported at short intervals during the whole operation.

Particular care must be exercised where it is necessary to draw cables through pipes and ducts, to avoid abrasion, elongation or distortion of any kind.

The ends of such pipes and ducts shall be sealed to approval of the Engineer after drawing in of the cables. The manufacturer's recommended bending radii for cables are to be adhered to.

24.6.2 **Excavations**

The excavations of cable trenches shall be carried out by the *Sub-Contractor*, along the routes and in the servitudes as shown on the drawings or as indicated on site.

The bottom of the trench shall be level and clear and the bottom and sides shall be free from rocks, stones, or other objects liable to cause damage to the cable.

All M.V. cables, unless otherwise specified, shall be laid at a depth of at least 1 000 mm and L.V. cables at 650 mm below FINAL FINISHED GROUND LEVEL.

Trenches shall not be less than 300 mm wide for one or two cables, and the width shall be increased where more than two cables are to be laid together so that the cables may be placed at least 150 mm apart throughout the run.

Where the nature of the ground does not permit the excavation of cable trenches to the specified depth without excessive blasting, the matter shall be referred back to the Engineer, who's decision shall be final.

The *Sub-Contractor* must take all necessary precautions to prevent trenching work being in any way a hazard to the public or hampering the progress of other contractors on site and to safeguard all structures, roads, railways, sewers, works or other property from any risk of subsidence and damage.

Volumetric measurements for excavations will not be done and trenches will be measured on a cost per meter of trench, basis.

The *Sub-Contractor* shall be responsible to remove all excess ground left over after trenches have been back filled. He will ensure that the surface is left in the same condition in which it was handed to him.

No guarantee can be given that blasting will not be necessary. This item shall be the full responsibility of the *Sub-Contractor* and he shall be required to adhere to all laws, regulations and bylaws regarding this type of work. The onus is on the *Sub-Contractor* to visit the site before submitting his tender, to make an assessment of the soil type and to allow for blasting if deemed necessary as no extra claims shall be considered.

24.6.3 **Bedding**

In all trenches a layer of at least 150 mm of clean sand shall be laid below the cable, followed by a layer of at least 150 mm clean approved bedding laid above the cable.

24.6.4 **Cable Warning Tape**

A yellow PVC cable warning tape shall be installed at least 300 mm above all cables in trenches.

24.6.5 **Backfilling**

Backfilling after bedding and laying of concrete slabs and warning tape, where applicable, is to be carried out with a proper grading of material to ensure settling without voids, and the material is to be properly compacted after the addition of every 150mm. The surface is to be made good as previously described.

Backfilling may not commence until the entire trench has been inspected by the Engineer, where necessary and the route recorded onto the "As Built" drawing.

24.6.6 **Recording and Installation of Joint and Cable Markers**

Each length of power cable shall be numbered with the drum number and its exact position entered on a route drawing, and after site testing these numbers shall appear on the test sheet covering the respective length of cable and the test result.

Full details of all joints are to be submitted and each joint is to be numbered and the position, type and number recorded on the route drawing.

The joiner's name and date of jointing as well as the weather conditions are to be recorded on such a drawing.

At the completion of each cable section the *Sub-Contractor* shall install a concrete, pyramid type cable joint marker at every joint position. Also at every deviation and branch-off and where indicated on the drawing, cable markers shall be placed. The position of each joint or cable marker must be exactly indicated on the "as built" cable route drawing.

24.6.7 **Cable Sleeves**

Sleeves shall be supplied and installed by the *Sub-Contractor* or by others as detailed in Section 2 where cable routes cross roads or permanent hard slab construction. It is however the responsibility of the *Sub-Contractor* to ensure that the installation is done in accordance with this specification where this work is performed by others.

All sleeves shall be installed at final depth of 1000 mm (to the bottom of the sleeve) fitted with a galvanised steel draw wire and both ends must be sealed off with glass fibre cloth "Think Pink" before backfilling.

Sleeves shall consist of 110 mm diameter PVC water pipe and shall extend to 1 m on both sides of the road.

All damaged tarmac, concrete or other surfaces shall be reinstated by the *Sub-Contractor* at his cost or by the person responsible for the installation of the sleeves and early notice shall be given to the Local Authority as to when this work is to be carried out.

24.6.8 **Testing**

H.T. cables shall be tested at a High Voltage as required by SABS for XLPE or PLTC cables complete with test certificate.

Testing to ensure correct phase rotation and phase colours shall be conducted by the *Sub-Contractor* and witnessed by the Engineer.

L.T. cables shall be tested using a 1 000 V Meggar.

23. **EARTHING AND BONDING**

General

The entire installation shall be properly and effectively earthed and bonded as prescribed in the Wiring Code and as specified.

Self-tapping screws are not acceptable as a means of securing earth conductors.

The armouring on all cables coming into switchboards shall be bonded together and bonded onto the earth bar.

Any copper tapes or conductors used for bonding or earthing installed outside the building or in accessible positions shall be run in galvanized conduits with bushes from 2000mm above ground level down to approximately 300mm below ground level. These conduits shall be securely fixed to the walls.

All earthing work must be executed before any painting commences.

All metal luminaires shall be earthed.

Iron, lead and zinc shall not be used in direct contact with copper earth bar or conductors.

The earth to all light and power points shall consist of correctly sized stranded copper conductors and shall be drawn in with the conductors and terminated at the earth terminal of the equipment being supplied.

Jointing and "tee offs" of lengths of strip conductor shall be performed by means of brazing or by tinning and bolting. An overlap of minimum three times the width of the conductor shall be allowed for longitudinal joints. The bolts used shall not have a diameter greater than one third the width of the copper strip. Brazed joints shall be brazed on all accessible sides and be smoothly and neatly finished off. The "Cadweld"

method of jointing may be used on strip copper connections/tee offs. Tinning, riveting and soldering are also permissible (copper rivets).

Stranded copper conductors shall be jointed by means of tinning and then bolting with 2 line taps (of the correct size) per joint or by means of specified clamps. An overlap of minimum 300mm shall be allowed. Stranded copper shall not be jointed by means of brazing.

The covering, including the insulation (if any) of an earth continuity conductor shall be green or taped green at a termination.

Except where otherwise approved, conduit or flexible conduit or cable armouring shall not be used as an earth continuity conductor.

Where lugs are used for terminating stranded earth conductors, the lugs shall be crimped with an approved type of crimping tool. The lug studs size shall correspond to the fixing bolt and the lug shall be so positioned that the full contact area of the lug is utilised.

All bolts/screws used for earthing shall be brass or cadmium plated mild steel bolts.

All earthing conductors which are looped, shall be installed in such a manner that the earthing system shall remain continuous, should a particular connection be disconnected.

Earthing continuity in conduits shall be maintained, i.e. expansion boxes, junction boxes etc.

The continuity of the earth conductors should be tested and recorded. In no case should the resistance from any point of the installation to the main building earth point exceed 0.09 ohms. In the event of this value being exceeded this must be brought to the Engineer's attention.

Where earth tails cross they must be brazed or crimped together.

Brazed joints to be oxy-acetylene brazed using 3mm diameter silballoy brazing rods as supplied by African Oxygen Ltd, or equivalent; no flux is required.

Where connection is made to painted steelwork the paint shall be removed over a minimum area to allow good contact between surfaces. Surfaces shall be coated with petroleum jelly before bolting. After bolting any scraped area not covered by the copper connection shall be made good using the original type and colours of paints.

Where connections are made to galvanised steelwork the surfaces shall be coated with petroleum jelly prior to bolting.

25.1 EARTH BAR

An earth bar shall be provided in each substation and/or main LV switch room to which shall be connected the main earth system and the main earth terminals from all the equipment in the switch room.

Unless otherwise specified the earth bar shall be mounted in a visible position against the wall adjacent to or over the cable trench. It shall consist of 50mm x 6,3mm copper section, mounted on spacers away from the wall and pre-drilled to accept bolts for connections and sufficient space to make further permanent or temporary connections. Cadmium-plated steel bolts shall be used for connections, and all connections shall be made by means of properly soldered or crimped lugs. Label individual conductors with Critchley or engraved plate.

25.2 BONDING

Bonding of conductive metallic parts shall be executed in accordance with the requirements of the Wiring Code of Practice. All bonds shall consist of perforated copper strips which shall wrap around conduits and pipes and secured with a brass screw, nut.

25.3 INSPECTION AND TESTING

The earth and bonding continuity shall be tested in accordance with the Wiring Code.

Test results must be submitted to the Engineer in writing for written approval before the system is permanently covered or handed over.

24. INSPECTIONS, TESTS AND COMMISSIONING

26.1 GENERAL

The Engineer may call for the inspection or testing of all or any goods forming the subject of the Contract. The Engineer may be present or represented at any of the tests carried out at any stage during the manufacture or installation.

The Engineer reserves the right to inspect equipment in the manufacturer's works before despatch and provision should be made for this in the programming.

The Contractor shall be responsible for arranging all the tests as specified, at the appropriate times.

The Contractor shall inform the Engineer in writing at least 7 days:

- before commencement of tests in the factory

- before despatch from the factory
- before commencement of site tests and/or commissioning.

The Engineer reserves the right to attend or not to attend any of the inspections, tests or commissioning. Whether the Engineer attends these or not, written reports and test results shall be submitted to the Engineer.

The Contractor shall replace any portion of the installation which does not meet with the requirements of the Wiring Code or this Specification or the local bye-laws as may be found by test or inspection. Such replacement shall be done at his own cost.

26.2 **TYPE TESTS**

Single copies of all type test certificates shall be submitted with the tender, or as soon as possible thereafter.

26.3 **ROUTINE TESTS**

Four copies of all routine test certificates shall be supplied:

- as soon as possible after testing in the factory and in any case not later than the delivery of the equipment to site
- as soon as possible after testing on site or commissioning and in any case before handover.

26.4 **SPECIAL TESTS**

Special tests shall be carried out as specified for specific materials, equipment or installations.

26.5 **TESTS AND INSPECTIONS BY LOCAL AUTHORITIES**

The entire installation shall be tested after completion in accordance with the Wiring Code and any applicable by-laws of local authorities.

The Contractor shall assist the inspectors of the local authorities during any tests carried out by them and shall supply tools, instruments and consumables for testing purposes.

The Engineer reserves the right to be present at any tests and the Contractor shall inform the Engineer of all tests to enable him to be present if he so desires.

The Engineer may perform similar tests at any time and the Contractor shall render all assistance and shall provide all tools and instruments which may be required for such tests.

The work specified in this document shall not be considered to have been completed until a clearance certificate for the electrical installation has been issued by the installation inspectors of the responsible authorities.

26.6 TESTING OF CIRCUITS FOR OPERATION

All protective devices shall be correctly set by the Contractor before any circuit is energised, and the Contractor is required to obtain all necessary data for ensuring the correctness of the setting.

No circuit shall be energised until it has been tested in accordance with the regulations and with this document. No motor shall be run until the equipment is in a safe and satisfactory condition for running.

26.7 OPERATIONAL AND CAPACITY TESTS

In hazardous areas the Contractor shall ensure that compliance with SABS 086 is re-established for all enclosures, glands, etc. after completion of inspection and tests before commissioning.

Full operational tests shall be carried out on all equipment, accessories, power and control circuits, mechanical and electrical interlocks, relays, overloads, under-voltage release mechanisms, other protective relays and mechanisms, fused switches, local and remote interlocking, tripping, protective and supervisory equipment, phase rotation, motor rotation directions, earthing, etc.

Tests to demonstrate the capacity specified or offered and general operating characteristics of all apparatus, etc., shall be made under the direction of the Engineer at time of final inspection under conditions imposed by him.

26.8 COMMISSIONING

Commissioning of equipment and systems shall not be undertaken. A damage to the equipment, systems and the building could result due to incomplete and incorrect installation work.

Commissioning procedures as stipulated by the suppliers and manufacturers of equipment shall be strictly adhered to.

The entire control system shall be adjusted and placed into operation by the control system supplier. Re-adjustments necessary to accomplish the specified results shall be carried out at no additional cost during commissioning and up to formal handover to the Employer.

The commissioning of specialised equipment such as centrifugal refrigeration machines, boilers, vacuum pumps, air compressors, etc. shall be undertaken by equipment suppliers.

All safety protection systems shall be fully commissioned, and set points properly checked out and adjusted, before equipment shall be allowed to run for commissioning purposes. The responsible commissioning Engineer shall be present to supervise the operation and adjustment of the equipment during the entire commissioning stage.

26.9 ACCEPTANCE TESTS

After completion, either in a part or as a whole the complete installations shall be subject to acceptance tests by the Engineer. The Contractor shall assist the Engineer during any test carried out and must supply tools and instruments for testing purposes.

26.10 TEST AND COMMISSIONING INSTRUMENTS, LABOUR AND CONSUMABLES, ETC.

All labour, power, fuel, dummy loads and all instruments and appliances that may be required for the tests and commissioning shall be provided by the Contractor.

Test instruments used to demonstrate capacities and characteristics specified or offered shall be tested for accuracy by an approved laboratory or by the manufacturer and certificates showing degree of accuracy shall be furnished to the Engineer.

If gauges, thermometers, etc., which are to be left permanently installed are used for tests, they shall not be installed until just prior to the tests to avoid possible changes in calibration.

26.11 TEST AND COMMISSIONING CERTIFICATES AND RECORDS

The Engineer reserves the right to attend or not to attend any of the inspections, tests or commissioning. Whether the Engineer attends these or not, written reports and test results shall be submitted to the Engineer.

All certificates shall be in English.

All test and commissioning forms shall be completed in rough or final form during these operations.

All test certificates are to be countersigned by the Engineer as "witnessed" or "accepted" or "seen".

Four copies of test and commissioning certificates shall be handed over to the Engineer.

Handover of the certificates and records is a prerequisite for handover of the installation.

25. CURRENT TRANSFORMER TESTS

27.1 GENERAL

The type and routine tests called for in IEC 60185 (BS 3938) and IEC 60044 shall be carried out as specified, excepting where modified in this subsection.

27.2 TYPE TESTS

27.2(a) Type tests previously performed

If evidence is available of type tests previously performed on identical current transformers which meet the Employer's requirements, this may be accepted instead of these tests.

27.2(b) Additional type tests

The following are required as additional type tests for protection current transformers:

- (a) a magnetization curve that shall include the knee point of the curve;
- (b) the secondary winding resistance referred to 75°C; and
- (c) the secondary leakage reactance in the case of high-reactance current transformers. This shall be determined by the Berghahn method or other approved method, in which case details shall be submitted.

27.3 ROUTINE TESTS

27.3(a) Secondary insulation and polarity tests

In addition to the specified tests, a final check on the secondary circuit insulation and the polarity of each current transformer, in relation to the associated equipment, shall be carried out before dispatch.

A test voltage of 2kV r.m.s. shall be applied for 1 min between the external terminals of each secondary winding, or section thereof and earth; any other winding, core, frame and case (if any) all being connected together and to earth.

27.3(b) Impulse tests

The current transformer shall be in position and connected as in service during the

impulse tests carried out on equipment with which they are associated. All current transformers shall be short-circuited and earthed during the test.

27.3(c) **Accuracy of protection current transformers**

The following measurements shall be recorded:

- (a) in the case of Class X current transformers, the exciting current shall be measured with the secondary voltage applied to the secondary winding.
- (b) the secondary winding resistance referred to 75°C.

All current transformers shall be short-circuited in the factory before dispatch.

27.4 **TEST CERTIFICATES**

The records of all tests and measurements specified in IEC 60185 (BS 3938) including previous type tests and the corresponding current transformer serial numbers, shall be attached to the test records required for the equipment with which the current transformers are associated.

26. **ON LOAD TESTING OF EQUIPMENT**

In view of the hazards inherent in these tests, they are to be carried out under the direct supervision of the Engineer and/or the Employer.

Operation and stability tests are required for on load commissioning of unit type protection, tap changers, etc.

These tests are to be made after the protective gear has been placed in service to ensure that all connections and test links have been replaced and test leads removed as well as to confirm the integrity of the CT circuits. Where necessary, voltage readings should be taken at the terminals on each relay to ensure that loop connections between the relay are complete.

Special attention should be paid to broken delta voltages and residual current circuits where zero voltage or current respectively may not proof of the completeness of the circuit.

27. **WORK TESTS**

The approval by the Engineer of the results of inspection and tests shall not relieve the Contractor of his obligations under the contract for the satisfactory performance of the testing and commissioning.

The Engineer reserves the right to call for further tests, which are in his opinion necessary to confirm satisfactory performance. Tests shall as far as possible simulate

site conditions.

Routine tests will be required on all equipment as described in this Section.

Except where otherwise indicated, all electrical tests shall be carried out at rated frequency with an approximately sinusoidal waveform.

All instruments shall be approved by the Engineer and if required shall be calibrated at the Contractor's expense.

28. SITE TESTS

The site test program shall confirm that the installation complies with the following:

"The equipment, as supplied and erected, shall be satisfactory within the appropriate limiting conditions as defined in the various Contract Specifications". On completion of these tests it shall be possible for the installation to be taken over and put to work without any further attention.

30.1 PROCEDURE

A program of tests shall be agreed between the Contractor and the Engineer, in conjunction with the erection and commissioning program.

Details of the tests to be carried out shall be agreed between the Contractor and the Engineer and the Contractor shall provide a complete set of test forms, which shall be approved by the Engineer, before testing commences.

A test form listing general checks shall be provided for each item of equipment. The test forms shall show the type of equipment being tested and serial number or other identifying mark. Provision shall be made on the form for recording all the test results.

The Contractor shall record the results of the test clearly, on the approved form and with clear references to the equipment and items to which they refer, so that the record can be used as the basis for maintenance tests during the working life of the equipment. Four copies of site test result records shall be provided by the Contractor to the Engineer as soon as possible after completion of the tests.

No tests as agreed under the program of tests shall be waived except upon the instruction or agreement of the Engineer in writing.

30.2 ENGINEER'S OBLIGATIONS

The Engineer shall have the right to witness all tests. In cases where the Engineer

fails to attend at any time or place duly appointed and the Contractor proceeds in the Engineer's absence, the Contractor shall, if so required by the Engineer, carry out repeat tests. If the original and repeat tests are satisfactory all reasonable expenses, which the Contractor has incurred in re-testing, will be borne by the Employer. If the re-testing is unsatisfactory, the costs will be borne by the Contractor.

Where overall tests are involved requiring more than one Contractor's co-operation, the test program shall be coordinated by the Engineer.

If he so desires, the Employer may nominate his representative(s) to accompany the Contractor during testing. The Contractor shall be advised by the Engineer of the proposed date when any item of equipment is to be made alive for the first time, in order that the Contractor may be present.

30.3 **RECORDS OF EQUIPMENT CHECKS AND TESTS**

Immediately after completion of the tests, the Contractor shall hand to the Engineer a readable copy of the test results taken on site. These results shall be recorded in Test Schedules. Four fair copies of Test Result and checks shall be prepared by the Contractor, and forwarded to the Engineer.

The following data shall be recorded for each piece of equipment tested:- the Contact Number; substation, the circuit or section, the Contractor's signature and the Engineer's acceptance.

General details of the plant should be recorded, including serial numbers, ratings, manufacturer's names.

30.4 **WIRING**

Insulation Resistance Tests at 500 V DC are to be carried out on all a.c. and d.c. protection, control, alarm and indication circuits to ensure that wiring is in a satisfactory condition. It is desirable to measure the insulation of all circuits before proceeding with other tests and it is essential that all a.c. and d.c. wiring associated with protective gear is proved, relay contacts and auxiliary contacts, etc. be closed, as necessary, to ensure this. The following tests should be carried out:-

- (a) Insulation resistance of current transformer circuits.
- (b) Insulation resistance of voltage transformer circuits.
- (c) Insulation resistance of d.c. circuits.
- (d) Insulation resistance between CT and VT circuits.
- (e) Insulation resistance between d.c. and VT circuits.
- (f) Insulation resistance between d.c. and CT circuits.

When measuring the insulation resistance to earth of individual circuits, all the other circuits should be normal e.g. earth link closed and d.c. circuits normal. This will ensure that the insulation of a circuit is satisfactory, both to earth and to all other circuits.

When testing the d.c. wiring, it may be necessary to remove the battery earth fault alarm from the circuits. If this is done, the battery should be earthed via a high resistance for example a voltmeter to earth during testing.

Static equipment, which may be damaged by the application of test voltages, may have the appropriate terminals shorted.

Inter - relay, inter - unit and cubicle wiring carried out at Site is to be checked to the appropriate circuit and/or wiring diagram. Where it is found necessary during pre-commissioning work to effect site modifications to the secondary wiring, site copies of the appropriate schematic and wiring diagrams are to be suitably amended and agreed with the Engineer in all circumstances before the circuit is commissioned.

Loop resistance measurements are to be made on all CT circuits associated with circulating current-type protection. These values are necessary to establish the operating characteristics of the protective scheme and should be checked against the manufacturers' calculated figures. Separate values are required for CT and lead burdens and all measurements are to be recorded on lead resistance diagrams. Pilot impedance and phase angle measurements shall be made on pilot cables to be used with unit type protection.

29. TRAINING OF EMPLOYER'S STAFF

The contractor shall propose an appropriate training program for the Employer's operating and engineering staff. This shall include the nomination of an appropriate venue and the duration of the training period.

If the proposed training involves traveling and accommodation and subsistence away from the Employer's home country, the Contractor shall be responsible for all the direct traveling and subsistence expenses involved for a maximum number of four (4) of the Employer's staff.

The Employer shall have the option at his own expense, to add further two (2) staff members.

The contractor shall provide a complete and detailed schedule of the training events but it is expected that formal training should last not less than 5 consecutive working days nor more than 10 consecutive working days.

The contractor shall advise the Employer of the minimum prerequisite level of education required for the employees to successfully participate in the training program.



Over and above any formal training, the program shall include, as a minimum, an onsite component covering:

- (a) on site preparation for transportation;
- (b) loading and off-loading procedure and precautions
- (c) fitting of accessories and their testing;
- (d) sensors and protective devices and their testing;
- (e) all testing of the completed system to ensure that it is ready for service.

Special emphasis shall be placed on quality control processes and maintenance to ensure maximum life for the equipment, as well the underlying theoretical aspects.

ANNEXURE B: EMPLOYER DOCUMENTATION (Available on Request)

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1. ACSA Occupational Health and Safety Policy Statement
2. Personal Protective Equipment
3. Environmental Management System
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