


Tender no:

SCOPE OF WORK FOR THE SUPPLY OF MIST ELIMINATORS For Sulphuric Acid C Plant Final Acid Tower




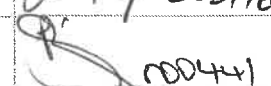
Tender no:

Revision¹: **1.0** see legend at bottom of page

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APPROVAL TO PROCEED

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INDEX

INDEX	2
SCOPE OF WORKS	3
1.0 Background, Present Situation and Proposed Solution.....	3
1.1 Background.....	3
1.2 Present Situation	3
1.3 Proposed Solution: Reason for this Tender.....	3
1.4 Technical Details	3
1.5 Hoisting Equipment.....	4
1.6 Pre-requisites & Inputs	4
1.8 Project Requirements	5
1.9 Plant Data	5
1.10 Drawings and/or Equipment Manuals.....	5
1.11 Supplied Services	6
1.11.1 Foskor Supplied Services	6
1.11.2 Successful Tenderer (Contractor/Consultant) Responsibilities	6
1.12 Scope of Work	7
1.12.1 Extent of the Work	8
1.12.2 Site Conditions	10
1.12.3 Location of the Works	10
1.12.4 Sample of Materials	10
1.12.5 Invoicing and Payment.....	10
1.12.6 Progress of Works.....	10
1.12.7 Cancellation of the Contract by Foskor.....	11
1.13 Company Profile	12
1.14 Quality Management.....	12
1.14.1 Quality Assurances:	12
1.15 Tender Adjudication.....	12
1.16 Tender Acceptance.....	13
1.17 Site Visit	13

SCOPE OF WORKS

1.0 Background, Present Situation and Proposed Solution

1.1 Background

Sulphuric Acid production at FOSKOR Richards Bay consists of three plants. Two of these plants (A and B plant which produce 1800t/day sulphuric acid) are part of the original design and are jointly referred to as the old section. They are identical. The new C plant (producing 3000t/day) was added in 2002. The plant is a Monsanto Enviro-Chem Systems design.

1.2 Present Situation

The required mist eliminators are utilized in the operation's absorption towers where sulphuric acid is used to absorb sulphur trioxide gas out of the gas streams thus converting it to sulphuric acid.

In this process, there may be some sulphuric acid mist carryover that has to be removed from the towers to prevent damage to downstream equipment and to prevent any environmental emissions.

1.3 Proposed Solution: Reason for this Tender

To address the above, FOSKOR calls on a reputable supplier to be responsible for the submission of a tender to:

Supply Final absorption tower Mist Eliminators to the FOSKOR, Richards Bay site for the C Sulphuric acid plant.

1.4 Technical Details

Plant Data

Acid inlet Temp	82°C
Acid outlet Temp	92°C
Acid Strength	98.5%
Gas inlet Temp	135°C
Gas outlet Temp	82°C

Gas Flow Components:

Mass flow (kg/hr)	207 767
Pressure (KPa)	5.97
Wet Flow rate (Nm ³ /hr)	207 767

Comp Flow rate

SO ₂ , Nm ³ /hr	86
SO ₃ , Nm ³ /hr	1359
O ₂ , Nm ³ /hr	9260
N ₂ , Nm ³ /hr	197 061
H ₂ O(g) Nm ³ /hr	0,0

1.5 Hoisting Equipment

Foskor Richards Bay takes on the responsibility of providing a crane and/or forklift for the offloading of the mist eliminators for the agreed upon period specified by the supplier and customer viz. Foskor Richards Bay

1.6 Pre-requisites & Inputs

FOSKOR Richards Bay will supply the successful Tenderer with the following:

- Equipment specified above in 1.5.
- Availability of duly authorised personnel to represent FOSKOR for this project
- FOSKOR technical specifications

1.7 Legislation, Standards and Codes of Practice

Latest revisions or amendments of the listed codes and specification are applicable to this contract:

Number	Title / Description	Revision
Act 85 of 1993	Occupational Health and Safety (OHS Act)	Latest
ISO 9000	Quality Systems Series	Latest
ASME IX	Qualifications Standards for Welding Specifications	Latest
FG 001	General Requirements for Projects	Latest
FQ 001	General Engineering Quality Requirements	Latest

All work listed in this scope of work shall be completed in accordance with the specifications and codes as listed above. It is the responsibility of the Contractor to be in possession of the latest standards and codes as listed above in the execution of this contract.

Suppliers of materials and the like, whose quality systems apply with one or more of the SABS/SANS ISO 9000 Series should be used whenever possible in the absence of a particular SABS/SANS Specification Standard Mark.

1.8 Project Requirements

The main requirement of the project is the Supply of Mist Eliminators with the following additional requirements:

- Guarantee that the physical integrity of the Mist Eliminators will be maintained
- Guarantee the process performance of the Mist Eliminators
- Supply of document containing Mist Eliminators physical properties
- Safe installing and removing procedure for Mist Eliminators
- It must be noted that the Final tower could operate at conditions where the acid flow could be nil, thus exposing the Mist Eliminators to a higher than specified temperature for a short while, hence material selection of the Mist Eliminators is critical and must withstand variations of this nature
- The specified Mist Eliminators must also be able to handle variations in sulphuric acid strength as is considered normal when operating plants of this nature

1.9 Plant Data

To deliver at

FOSKOR(Pty) LTD – RICHARDS BAY DIVISION,
21 JOHN ROSS PARKWAY,
RICHARDS BAY,
3900
SOUTH AFRICA

1.10 Drawings and/or Equipment Manuals

- The drawing and data pack will become property of Foskor on execution of contract.

On completion of the project, the contractor must certify all documentation and drawings for correctness and conformance to the OHS Act.

1.11 Supplied Services

1.11.1 Foskor Supplied Services

Foskor shall be responsible for		Applicable:
1	Supply a copy of the relevant Foskor Procedure Specification(s).	YES
2	Supply the relevant Foskor Technical Specifications	YES
3	Supply a copy of reference drawings if required.	Refer 1.10
4	Supply equipment (if applicable)	Refer 1.5
5	Provide access to ablutions facilities. (not change rooms) <ul style="list-style-type: none"> Successful Tenderer (Contractor/Consultant)'s workers to be fully dressed in required PPE when coming on site. The successful Tenderer to ensure that its workers/subcontractors/ supplier that are making use of facilities, do so in an orderly and well-mannered way. Successful Tenderer is not allowed to make use of Foskor's change room or tearoom facilities unless agreed to in writing. The successful Tenderer might be called on to assist with the maintenance and cleaning of ablutions, should Foskor at its discretion be of the opinion that it be necessary. Cost associated with such cannot be claimed from Foskor. 	NO
6	Assist in issuing of work clearances and HIRA certificates.	YES
7	Make available duly authorized personnel to represent Foskor on this project	YES
8	Waste/ Scrap bins for disposal of waste (general and contaminated) where and when required. (only if not part of the scope of works) <ul style="list-style-type: none"> Successful Tenderer (Contractor/Consultant) to indicate the type (no and size of bins) and frequency of waste disposal it would require. 	ON REQUEST

1.11.2 Successful Tenderer (Contractor/Consultant) Responsibilities

The successful Tenderer (Contractor/Consultant) shall be responsible for (inter alia):		Applicable:
1	Supply suitable qualified and competent labor inter alia: general, specialized, artisans and supervision to fulfill the scope of work.	NO
2	Supply of tools and any specialized equipment.	YES
3	On approval of request for Site Establishment, to safely complete and set up site. <ul style="list-style-type: none"> On completion of works, site to be re-instated to original or accepted in writing as- 	NO

The successful Tenderer (Contractor/Consultant) shall be responsible for (inter alia):		Applicable:
	is.	
4	Supply suitable (approved) personal protective equipment (PPE)	NO

1.12 Scope of Work

The Scope of Work ("Works") calls for the supply of **Mist Eliminators** and all the relevant associated works that is required to make such Mist Eliminators functional for its purpose.

Scope of supply:

NB. The specification shown below are those of the currently installed mist eliminators. Any improvements in terms of efficiency and construction must be clearly detailed in the quotation.

Mist Eliminators

	Final Tower
Type	ES 212 (G15) or equivalent
Quantity	58
Frame	SS316
Gasket	6mm Glass/PTFE
Estimate mist load	1250 mg/m ³
Seal cups required	Yes (Flanged)
Candle drain pipes	Yes
Allowable ΔP	250mmH ₂ O
%Efficiency required	100%, >3.0 microns 99%, <3.0 microns
Flow	EFF
Emission standard	≤0.075 kgH ₂ SO ₄ per metric ton acid

The following additional information must be catered for in this tender:

- Seal Cups: Size and drawing to be given. Drawing should consist of pipe size including schedule, flange thickness, PCD, flange OD and number of bolts.
- Gaskets: Material of Construction preferred is Gylon or equivalent. The number of gaskets must be clearly stated.
- Bolts/Nuts/Washers: Material of Construction preferred is SS316L. Numbers and sizes must be clearly stated. Current bolt size is M12X35, nut size M12 and washer size is Φ14

The project will be undertaken in terms of the latest revisions and amendments of all relevant legislation, standards and Codes of Practices. The contractor will complete the Works in accordance with all statutory obligations, municipal regulations, and all other relevant requirements. The Contractor is specifically reminded of the requirements in terms of the Occupation Health and Safety Act, Act 85 of 1993 and latest amendments in terms of this project.

1.12.1 Extent of the Work

The Tenderer is to supply a tender with pricing for the supply of the Mist Eliminators as specified.

Please note that Foskor may accept or reject any part of a Tender without being obliged to accept such a tender in its entirety.

The Tenderer would determine the work methodology and approach; however, it is imperative that the outcome of the work meets the following requirements:

[Note: All references to **Contract** mean the same as **Tender**, and to **Contract Works** mean the same **Works** or **Scope of Works**.]

1.12.1.1 Supply of Mist Eliminators

The Tenderer shall, in accordance with the requirements of the Scope of Work, provide the Mist Eliminators on or before the due date determined in accordance with this Tender, and/or stated in a written order/instruction issued by Foskor.

(a) PACKAGING, MARKING AND DELIVERY

1. Unless otherwise stated in the Tender, all containers (including packing cases, boxes, tins drums and wrappings) supplied by the Tenderer shall be considered as non-returnable, and their cost having been included in the price of the Equipment.
- 3 The Tenderer shall:
 - a) clearly mark the outside of each consignment or package with the Tenderer's name and full details of the destination in accordance with Foskor's order and include a packing note stating the contents thereof;
 - b) on dispatch of each consignment, send to Foskor at the address for delivery of the Mist Eliminators, an advice note specifying the means of transport, weight, number or volume as appropriate and the point and date of dispatch;
 - c) Send to Foskor a detailed priced invoice as soon as is reasonably practical after dispatch of the Mist Eliminators, and
 - d) State on all communications the relevant order number and code number (if any).
- 4 Mist Eliminators shall be delivered on the days, between the times and at the address specified by Foskor.



- 5 Should the Tenderer fail to supply any of the Mist Eliminators on the date or dates or within the period or periods specified thereof, or should he fail to replace any rejected Mist Eliminators as required by the Tender, the Tenderer shall be liable to make good to Foskop all loss and damage occasioned by such failure, including any reasonable price (whether greater than the appropriate Tender price or not) paid by Foskop in purchasing the Mist Eliminators on which default has been made, from a source other than the Tenderer. In such an event, Foskop shall be at liberty to retain the amount of any such loss or damage from any money due by Foskop to the Tenderer but without prejudice to other methods of recovery open to Foskop.

(b) **QUALITY OF Mist Eliminators**

- 1 All Mist Eliminators supplied shall comply with the requirements of the Scope of Work.
- 2 All Mist Eliminators covered by this Tender shall be the subject of Foskop's inspection and test at all times before, during or after supply.
- 3 If the Tenderer fails to supply Mist Eliminators or services in accordance with the provisions of the Tender, Foskop may reject any part of the Mist Eliminators by giving written notice to the Tenderer specifying the reason for rejection and whether replacement Mist Eliminators are required and within what time.
- 4 All rejects shall be held at the Tenderer's risk and expense including all transportation and handling costs until returned to or collected by the Tenderer. All rejects shall be replaced or rectified and made good at the Tenderer's expense within the specified replacement period to the full satisfaction of the inspectors and in conformity with the standards, specification, or samples specified in this Tender.
- 5 In the event of the tenderer failing to remove such rejected Equipment within 5 days of notification of the rejection, Foskop shall be at liberty to return them at the Tenderer's risk, the cost of carriage being recoverable from the Tenderer. In the event that the Tenderer considers himself aggrieved, he may, within 5 day of the receipt of notification of rejection give the Foskop notice of objection, whereupon the Equipment shall not be removed until Foskop so directs.

(c) **WARRANTY**

Without prejudice to any other rights of Foskop under these conditions, the Tenderer warrants that:

- i) all Mist Eliminators delivered will be free from defects;
- ii) this warranty shall survive any inspection, delivery, acceptance or payment by Foskop

1.12.2 Site Conditions

The site is located on the Foskor Richards Bay Plant; approximately **500** meters from the main entrance and access for vehicles **are** possible.

1.12.3 Location of the Works

The site is situated within the premises of Foskor at Richards Bay. No site visit is required, but it can be arranged if necessary.

1.12.4 Sample of Materials

The work is to be executed with materials of the best specified and in the most substantial and workmanlike manner under the inspection of Foskor and to its satisfaction.

The Contractor shall furnish, without delay, such samples as called for or may be called for by Foskor, who may reject all materials or workmanship not corresponding with the approved sample.

1.12.5 Invoicing and Payment

Payment will be made by Foskor, after approval by the Foskor Project Representative (i.e. Engineer, Area Manager) of the submitted Payment Certificate to the Contractor within **30 (thirty)** days from the date of receipt of the Contractors approved invoice.

The invoice shall be approved in accordance with the provisions of Foskor's terms and conditions.

The invoice submitted is to be in a format acceptable to the Foskor Project Representative and need to contain the following minimum information:

- Company details, registration no and VAT registration no
- Purchase Order no
- Detail of work done to date
- Detail of claims to date (Excluding the current claim)
- Value of the current claim and work done
- VAT charged

1.12.6 Progress of Works

Should Foskor or its appointed Agent at any time be of the opinion that the rate of progress of the Works or any part thereof is too slow to ensure the completion of the Works or any part thereof by the Completion Date, he shall so notify the Contractor in writing, with specific reference to this Clause, and the Contractor shall thereupon, subject to the approval of Foskor, which approval shall not be unreasonably withheld, take such steps as are necessary

to expedite progress so as to complete the Works or the said part thereof by the Due Completion Date.

1.12.7 Cancellation of the Contract by Foskor

If:

- (a)
 - (i) the estate of the Contractor shall be sequestrated (provisionally or finally), or
 - (ii) the Contractor shall publish a notice of surrender of his estate as insolvent, or
 - (iii) the Contractor, being a company or a close corporation, shall go into liquidation (provisionally or finally), or
 - (iv) the Contractor shall assign the Contract without the consent in writing of Foskor having first been obtained, or
 - (v) the Contractor shall enter into a compromise with the general body of his creditors, or
 - (vi) the Contractor shall have an execution levied on his goods, or
- (b) the Foskor Project Representative shall certify in writing to Foskor, and to the Contractor, with specific reference to this Clause, that in his opinion the Contractor
 - (i) has abandoned or repudiated the Contract, or
 - (ii) has, without reasonable excuse, failed to commence the Works in terms of the time allowed for it agreed to, or
 - (iii) has suspended the progress of the Works without due cause, or
 - (iv) has failed to proceed with the Works with due diligence, or
 - (v) has failed to remove materials from the Site or to pull down and replace work, which materials or work have been condemned and rejected by the Foskor Project Representative, or
 - (vi) is not executing the Works in accordance with the Contract, or
 - (vii) has, without the approval of the Foskor Project Representative, subcontracted any part of the Contract or has failed to expel any subcontractor after having been instructed to do so, or
 - (viii) has failed to provide the Surety ship, Guarantees or Proof of Insurance within the time stipulated and for 14 days after receiving a written notice from the Foskor Project Representative, referring specifically to the default concerned and to this Clause, failed to remedy the default,

Foskor may, by written notice to the Contractor, cancel the Contract.

1.13 Company Profile

Tenderers are to submit an extensive portfolio indicating their experience and expertise with reference to supplying of Mist Eliminators.

1.14 Quality Management

The successful Tenderer is to adhere to Foskor's Quality Management System and specifications incorporated in this Tender Document.

1.14.1 Quality Assurances:

- i. It is a requirement of the contract that the successful Tenderer (Contractor/Consultant) maintains an effective documented system for the control of product quality.
- ii. Proof of compliance (performed quality document) with a recognized quality assurance standard, such as ISO 9000, should be submitted with the Tenderer's (Contractor/Consultant) tender.
- iii. The Tenderer's (Contractor/Consultant) Quality Assurance Department Manager shall be responsible to a senior executive only and not be under the control of persons responsible for production.
- iv. The Tenderer's (Contractor/Consultant) Quality Assurance Manager is regarded as the principal link between the Tenderer (Contractor/Consultant) and Foskor in all matters affecting quality.
- v. The successful Tenderer's (Contractor/Consultant) Quality Manager shall have access to the successful Tenderer's (Contractor/Consultant) offer document and to all other associated specifications, drawings and documents necessary for the satisfactory execution of the project.

1.15 Tender Adjudication

Proposals will be adjudicated on a mix of the following criteria (in no particular order):

- Technical support
- Track record
- Foskor's HDSA Policy. Policy available on request.
- Price

1.16 Tender Acceptance

Note that Foskor is not obligated to accept the lowest tenderer in the tender process.

1.17 Site Visit

No site visit required, but it can be arranged if necessary.

Foskor Contacts:

Technical Enquiries

Sulphuric Acid Production Engineer: Mr Anthony Tloubatla (035) 902 3371 or Anthonyt@foskor.co.za

Sulphuric Acid Production Manager: Mrs Precious Buthelezi (035) 902 3058 or Preciousb@foskor.co.za

Commercial Enquiries:

Procurement – Mr Lisu Khumalo (035) 902 3278 or Lisuk@foskor.co.za

The tender must be in a sealed envelope, with the tender number and closing date clearly marked on the outside. Tender must be deposited in the tender box, situated at Foskor Richards Bay's Main reception, before 12h00 of the closing date.
