Eskom	**Scope of Work**	**Hendrina Power Station**

Title:	**Scope of Work for Supply, Delivery and Installation of Sand and Filter Nozzles at Water Treatment Plant.**	Document Number: **380-137520**
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CONTENTS

1. INTRODUCTION

The Scope of Work (SOW) entails the supply, delivery, and installation of sand for sand filter and filter nozzles at Hendrina Power Station.

2. SUPPORTING CLAUSES

2.1 SCOPE

The scope comprises of, but is not limited to, the supply, delivery, removal, replacement, and disposal of sand inside the sand filter and filter nozzles in accordance with the specifications and requirements outlined in this document. All spares supplied must be accompanied by quality control documentation.

2.1.1 Purpose

The purpose of this scope of work is to outline all the spare materials required and the responsibilities of all parties involved. The contract scope of work serves to support the tender technical evaluation process.

2.1.2 Applicability

This document is applicable to Hendrina Power Station.

2.2 NORMATIVE AND INFORMATIVE REFERENCES

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

[1] 240-168966153 Generation Tender Technical Evaluation Procedure

[2] Tender Technical Evaluation Strategy for the supply, delivery and installation of sand and filter nozzles.

[3] QM-58 Supplier Contract Quality Requirements Specifications

[4] 240-105691858 Materials Management Safe Work Procedures Transportation Requirements for Material Handling

2.2.2 Informative

[5] ISO 9001 Quality Management Systems

[6] 32-1-34 Eskom Procurement Policy

2.3 DEFINITIONS

Term	Definition
Contractor	Service provider contracted for supplying a specific service to Eskom Hendrina Power Station. Used interchangeably with the term *Supplier*.
Employer	The organization (Eskom) to which the supplier will be contracted for this tender and contracts that may result therefrom
Employer's Premises	Hendrina Power Station

Term	Definition
Returnable	Document submitted by tenderer for evaluation in support of tender bid
Spares	Parts that can be used for replacement

2.3.1 Classification

Controlled Disclosure: Controlled Disclosure to external parties (either enforced by law or discretionary).

2.4 ABBREVIATIONS

Abbreviation	Description
OEM	Original Equipment Manufacturer
ISO	International Organisation of Standardisation
WTP	Water Treatment Plant
PS	Power Station
SOW	Scope of Work
TET	Technical Evaluation Team

2.5 ROLES AND RESPONSIBILITIES

System Engineer – Responsible for defining the technical specifications and scope to be executed by the contractor, as well as ensuring that sound engineering practice is followed.

Contract Manager – Responsible for the procurement document(s) required to establish a contract with the contractor deemed capable of executing the scope.

Contractor – Responsible for providing all the services required for the execution of the full scope of work.

2.6 PROCESS FOR MONITORING

N/A

2.7 RELATED/SUPPORTING DOCUMENTS

N/A

3. SCOPE OF WORK

Subsequent to the issuing of a task order by the *Employer*'s representative, the contractor must:

- The supplier must supply, deliver, and install the required sand for the sand filter and filter nozzles.
- Transport the equipment to the *Employer*'s premises,
- Supply all necessary materials and test certification/documentation.
- Provide confirmation of the technical specification for the delivery of spares.

3.1 EFFECTIVE DATE

This document will be effective from the date that the contract is authorised.

3.2 WORKS

The scope covers the supply, delivery, installation, disposal and commissioning of six sand filters at water treatment plant together with filter nozzles. The scope also covers the removal and disposal of the existing sand on the sand filters. There are 6 of these sand filters, and each sand filter has a volume of 25 m^3 plus 5 m^3 of sand (that will be stored for backup, which will be used to top up), and the total amount of sand required for all six sand filters is 180 m^3 of sand. It must be noted that in the plant, there is no sand decanting or sand offloading equipment, which means that the removal and installation of sand inside the filter must be manual, or the supplier to provide equipment for the transportation of sand. The packaging material of the sand must also allow movement of 70 m from the delivery point to sand filter area, and the sand filters are at a height of 4 m above the ground.

The plastic filter nozzles are installed at the bottom of each sand filter, and each sand filter has or requires 300 plastic filter nozzles. In total, there are 1800 plastic filter nozzles that must be supplied and installed in all sand filters, and the type of the filter nozzle must be a K1 type (as shown on the appendix). The supply of filter nozzles must include a nozzle seal/gasket per nozzle, and that will be 1800 seals/gasket (these gaskets must be the same diameter as nozzles). Scope also covers the removal of the current existing filter nozzles, which will be stored on site as back-up. The following are the requirements for sand and filter nozzles.

1.1. Sand particle size grading per sand filter (30 m^3)

i. Greater than 1.41 mm, there must be 0% to 3% of sand.

ii. Between 1.18 to 1.2 mm, the sand must be greater than 25% and less than 30%.

iii. Between 0.95 to 1 mm, the sand must be greater than 60% and not less than 50%.

iv. Between 0.85 to 0.95 mm, the sand must be greater than 10% and less than 20%.

v. From 0.71 mm to less than 0.85 mm, the sand must be between 0% to 3%.

1.2. Filter nozzle K1 dimensions

i. Slot 50mm, Treads 30 mm, Tread length 20 mm, shaft 250 mm, shaft inside diameter 20 mm, shaft outside diameter 25 mm, filter nozzle head 50 mm, shaft bottom two opening length 15 mm, and width 3 mm.

1.3. Safety features

Sand shall be provided with the following safety features:

i. MSDS.

ii. Laboratory results of grading analysis.

iii. Data sheet and drawing for the filter nozzle.

The feeder shall have a fully automatic lubrication system with an option for manual lubrication.

3.3 MATERIAL CERTIFICATES AND GUARANTEES

The following documentation must be supplied to the *Employer*'s representative before any item is accepted on site:

- Material Certificate for all metallic products.
- Applicable guarantee/warranty, where applicable.

3.4 GENERAL REQUIREMENTS

None.

3.4.1 Handling And Transportation

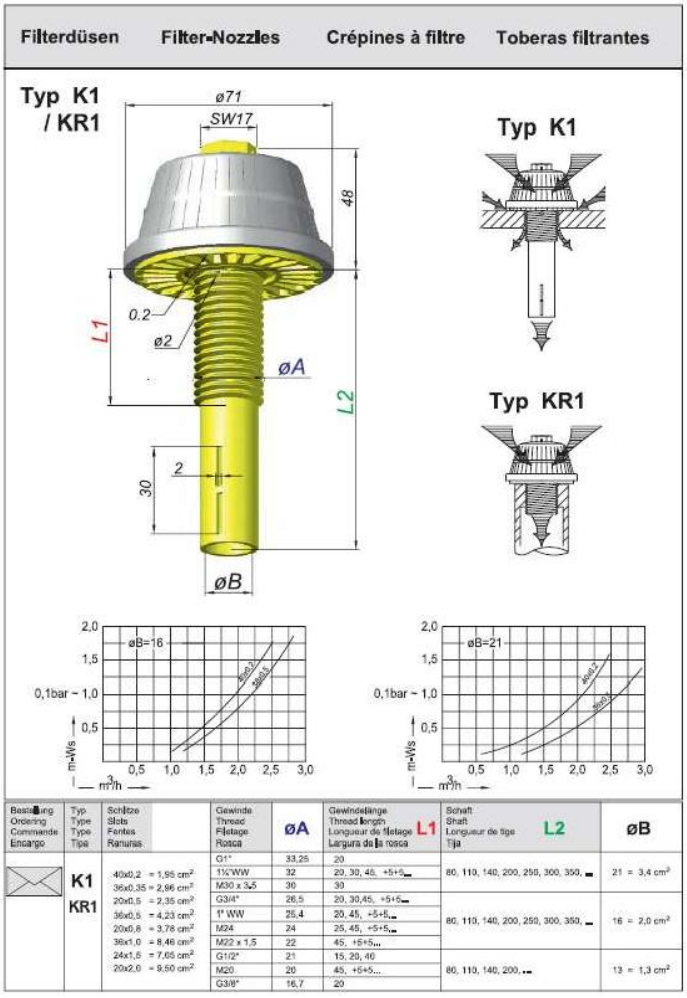
The *contractor* is expected to practice safe handling techniques during the onloading, offloading, installation, and throughout the transportation of the equipment. The *Employer's* representative will not accept any damaged items upon delivery.

Should the delivered equipment be found to be defective or non-functional during or after delivery, the contractor remains responsible for the handling and transportation in the replacement process of the item(s).

4. ACKNOWLEDGEMENTS

N/A

5. APPENDIX 1: FILTER NOZZLES SPECIFICATIONS.



Bestellung Ordering Commande Encargo	Typ Type Tipo	Schlitze Slots Fentes Ranuras	Gewinde Thread Filetage Rosca	øA	Gewindelänge Thread length Longueur de filetage L1 Largura de la rosca	Schaft Shaft Longueur de tige L2 Tija	øB
	K1 KR1	40x0,2 = 1,95 cm² 36x0,35 = 2,96 cm² 20x0,5 = 2,35 cm² 36x0,5 = 4,23 cm² 20x0,8 = 3,78 cm² 36x1,0 = 8,46 cm² 24x1,5 = 7,65 cm² 20x2,0 = 9,50 cm²	G1"	33,25	20	80, 110, 140, 200, 250, 300, 350, ...	21 = 3,4 cm²
			1¼"WW	32	20, 30, 45, +5+5...		
			M30 x 3x5	30	30		
			G3/4"	26,5	20, 30,45, +5+5...	80, 110, 140, 200, 250, 300, 350, ...	16 = 2,0 cm²
			1" WW	25,4	20, 45, +5+5...		
			M24	24	25, 45, +5+5...		
			M22 x 1,5	22	45, +5+5...		
			G1/2"	21	15, 20, 40		
			M20	20	45, +5+5...	80, 110, 140, 200, ...	13 = 1,3 cm²
			G3/8"	16,7	20		