

	Scope Of Work	Constructing Services
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1. INTRODUCTION

Construction Services' Civils division is undertaking a number of dams, coal stock yard and related works projects. These projects require the use of bentonite, lime and cement on different applications. In view of that ERI Construction Services wants to enter enabling contracts with service providers to supply bentonite, lime and cement on an as when required basis.

2. SUPPORTING CLAUSES

2.1 BACKGROUND

Eskom Rotek Industries Construction Services is responsible for the Construction of Roads, Dams, Coal stock yards, Substations, Buildings, Transmission lines, Distribution network and Cable construction in various Projects.

These operations are on a twenty-four hours (24) per day, seven (7) days per week basis.

Construction activities vary from project to project depending on the amount of the project.

Operation activities required entails:

- Bulk Earthworks
- Roads Construction
- Buildings Facilities
- Coal stock yard platforms
- Construction of Ash dam facilities and Ash water Return dams
- Construction of Transmission lines
- Cabling
- Road and Building Maintenance on all Power stations

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2.2 SCOPE

- 2.1. The supply and delivery of bentonite, lime and cement as outlined in the price list.
- 2.2. Material shall be delivered as per site management requirements relating to mass, quantity, date and time.
- 2.3. Delivery Vehicle shall comply with the relevant Eskom SHE specifications as well as the latest Construction Regulations.
- 2.4. Supplier to submit a SHEQ file for every site.

2.2.1 PURPOSE

The purpose of this scope is to ensure that bentonite, lime, cement, Geotextile, Geocell and Geogrids are readily available as and when they are required.

2.2.2 APPLICABILITY

This document shall apply to the site with attached addendums.

This document shall be effective from the authorisation date.

2.3 NORMATIVE/INFORMATIVE REFERENCES

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs and additional site-specific ones.

2.3.1 NORMATIVE

- [1] ISO 9001 Quality Management Systems
- [2] OSHAS 1800 Safety Management Systems
- [3] Occupational Health and Safety Act and Regulations (85 of 1993)
- [4] 240-62196227_Eskom Life Saving Rules
- [5] 32-95_Environmental, Occupational Health and safety Incident Management Procedure

2.3.2 INFORMATIVE

- [6] Criminal Procedures Act 51 of 1977
- [7] Labour Relations Act 66 of 1995

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[8] Basic Conditions of Employment Act 75 of 1997

2.4 DEFINITIONS

Description	Definition
Appointed Supplier	Means a supplier appointed by the principal contractor.
Baseline Risk Assessment	(32-520) baseline operational risks refer to the health and safety risks associated with all standard processes and routine activities in the business
Contractor (includes appointed contractor)	means an employer as defined in section 1 of the Act who performs contract work and includes principal contractors
Competent Person	(OHS Act) means any person having knowledge, training, experience, and qualifications, specific to work or task being performed, provided that, where appropriate, qualifications and training are registered in terms of the South African Qualifications Authority Act, 1995 (Act No. 58 of 1995).
Danger/Dangerous	Means a condition/substance that constitutes a risk of personal injury, impairment of health, or death
Employee	(OHS Act) means, subject to the provisions of subsection (2), any person who is employed by or works for an employer and who receives remuneration or who works under the direction or supervision of an employer or any other person.
Employer	(OHS Act) means, subject to the provisions of subsection (2), any person who employs or provides work for any person and remunerates that person or expressly or tacitly undertakes to remunerate him/her, but excludes TES (ex. labour broker) as defined in section 1(1) of the Labour Relations Act.
Lifesaving Rules	(240-62196227) a rule that, if not adhered to, has the potential to cause serious harm to people.
Permit To Work	Means the printed form containing sections entitled application, permits to work, suspension, suspension revocation, clearance and revocation, and used for the authorisation of all work to be carried out in terms of these regulations.
Plant	Means structure, machinery, low voltage electrical equipment or equipment which does not fall within the scope of the Operating Regulations for High-voltage Systems, and excludes, mobile, portable lifting equipment, domestic circuits, appliances and tools.
Responsible Person	Means a person who has been authorised in terms of these regulations to be responsible for ensuring that the work is covered by a permit to work can be carried out and executed taking health and safety precautions into account and within the terms of 36-681_Generation Plant Safety Regulation

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Safe/Safely/Safety	Means a condition not posing any danger, an activity that can be carried out without danger, or protection against danger.
Shall and should	The word “shall” be understood as mandatory and “should” as recommended.
Skilled Person	Means a person who has been trained, has adequate knowledge for the task at hand and declared competent in writing.
Supervision/Supervise	Means to oversee the actions of a person(s) to such an extent as to prevent any dangerous act, as far as reasonably practicable. Such a supervisor must be trained in risk assessment techniques and be able to understand the dangers / hazards associated with the task and who has the authority to ensure that precautionary measures taken are implemented.
Visitor	Any person visiting a workplace with the knowledge of, or under the supervision of, an employer.

2.5 ABBREVIATIONS

Abbreviation	Explanation
RA	Risk Assessment
AP	Appointed Person
CSY	Coal Stock Yard
LAR	Limited Access Register
ERI	Eskom Rotek Industries
OHSACT	Occupational Health and Safety Act
OEM	Original Equipment Manufacturer
RP	Responsible Person
PPE	Personal Protective Equipment
PTW	Permit To Work
H&S Rep	Health and Safety Representative

2.6 MATERIAL SPECIFICATION AND WORK EXECUTION

Material:

All materials required to be supplied in safe and secured packaging.

- Bentonite to be supplied in 1 tonne sealed bags and marked with batch numbers.
- Lime to be supplied in 40kg or 50kg bags
- Cement to be supplied in 50kg bags. Bags to be placed in plastic wrapped pallets
- Geotextile to be supplied in rolls. Rolls wrapped in plastic packaging

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- Geocells to be supplied in rolls
- Geogrids to be supplied in rolls

The delivery plan should be accepted by the Project Manager before delivery on site.

Datasheets to be submitted for approval prior to delivery.

NB: No delivery will be accepted before datasheets are approved.

Bentonite:

Before bentonite is delivered on site, a sample will be collected from the supplier. The sampling will be done on batches that are already prepared for sale. Swell index test will be conducted on the samples as per ASTM D5890. Once results are out and showing swell index of 24ml/2g or higher, delivery will then resume.

The bentonite shall be a natural, powdered sodium bentonite meeting the properties shown in the table below:

- Property: Test Method: Required Value:
- Free Swell ASTM D 5890 24 ml/2g min.
- Moisture Content ACC 1009 12 % max.
- Particle Sizing ASTM D422 5 % max. + #10
- 15 % max. - #200
- The supplier to attach test certificate of a representative sample from a batch that is going to be delivered to Medupi Site, and testing should have been done by independent SANAS Accredited Laboratory.

Cement:

Cement shall conform to SANS 50197-1 or EN 197-1 and have a Strength Class of 42.5. Cement extenders shall conform to SANS 1491: parts 1, 2 and 3.

The following cement extenders are allowed but limited as follows:

- Fly Ash: 30% maximum. Including
- Ground Granulated Blast furnace Slag: 50% maximum

The following cement types are acceptable

- Cem I 42,5 – Portland Cement (If available)
- Cem II 42,5/A-S, B-S, A-V, B-V or A-M – Blended Cements.

Lime:

- The specification for limes is as follows:
- Hydrated Road Lime.
- Calcium Hydroxide (Ca(OH)_2) = 80% to 90%
- Calcium Oxide (CaO) = 60% to 70% as per SABS 824:2006
- Otherwise its as directed by site.

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GEOTEXTILES

Geotextile for Liner Protection

The protection geotextile shall be a minimum 1080 g/m² non-woven, needle-punched, staple fibre or continuous filament, polypropylene, which complies with the specifications as set out in GRI-GT12 (a).

Extract from GRI-GT12 (a) & (b)

Property	Test Method	Unit	Value
GRI-GT12 (a)			
Mass per unit area	ASTM D5261	g/m ²	1080
Tensile Properties	ASTM	kN	225
Strength	D4632	%	50
Strain @ max load	ASTM D4632		
Trapezoidal Tear Strength	ASTM D4533	kN	0.96
CBR Puncture	ASTM	kN	7.56
Max force	D6241	mm	
Elongation @ max force	ASTM D6241		

Geotextile for Liner Separation

The separation geotextile shall be a non-woven, needle-punched, staple fibre or continuous filament, polypropylene, which complies with the specifications as set out in GRI-GT13 Class 2 (moderate survivability).

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Extract from GRI-GT13

Table 2 (b)-Geotextile Properties Class 2 (Moderate Survivability)

Property	ASTM Test	Unit	Elongation $\geq$ 50%
Grab Tensile Strength	D4632	N	700
Trapezoid Tear Strength	D4533	N	250
CBR Puncture Strength	D6241	N	1400
Permittivity	D4491	Sec-1	0.02
Apparent Opening Size	D4751	Mm	0.60
Ultraviolet Stability	D4355	% Ret. @ 500 hrs	50

GEOCELLS

The geocells shall be a high tenacity polypropylene tape, coated with polyethylene and shall comply with the specifications shown below:

Property:	Test Method:	Unit:	Value:	Note:

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Tensile strength	SANS 10221	kN / m	26	Minimum (Warp & Weft)
Elongation	SANS 10221	%	12	Maximum (Warp & Weft)

The geocells used are to be in a 200 x 200 mm grid and range from 100 to 250 mm high

Delivery Trucks:

- Delivery trucks can only be let into the Power Station from 08h00 to 17h00. Any truck that comes after 17h00 will wait overnight outside until the next morning.
- Delivery trucks will be escorted from gate 5 to the laydown area.
- Oil and fuel spillages from delivery trucks must be cleared within an hour alternatively, Eskom Rotek Industries shall source at whatever costs other service providers to clean the spillage and costs shall be for the Eskom Rotek Industries
- Broken bags will not be accepted on site, will be sent back with truck at the supplier's cost.

Delivery Driver:

The following is necessary for the delivery driver:

- Professional Driving Permit
- Valid Medical Certificate

Required PPE (Specification to be supplied under SHEQ)

- Overalls-specific to activity
- Safety boots
- 3-point chin strap hard hat
- Gloves
- Safety goggles
- Shin guards
- Dust masks

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- Cloth masks

2.7 PROCESS FOR MONITORING

N/A

2.8 RELATED/SUPPORTING DOCUMENTS

N/A

3. MANAGEMENT STRATEGY AND START UP

3.1 THE SUPPLIER'S PLAN FOR MATERIAL DELIVERY

Schedule to be supplied by the Contractor after an agreement has been reached with Eskom Rotek Industries. Delivery will be over a 12-month period.

3.2 MANAGEMENT MEETINGS

No meetings scheduled.

3.3 INVOICING AND PAYMENT

Invoicing and payment turnaround time is 60 days. Invoices to be submitted after every delivery.

3.4 CONTRACT CHANGE MANAGEMENT

Task Order form to be used when work within the service is instructed to be carried out within a stated period. A task Order will be sent to the Supplier via an email. In the case of a compensation event, the Supplier must give the *Employer* an early warning and a quotation for the total costs, must be submitted electronically by the Supplier for that compensation event by email.

3.5 RECORDS OF DEFINED COST TO BE KEPT BY THE SUPPLIER

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All delivery notes by the Supplier will be done are to be approved by the *Employer*. Delivery notes will be submitted to and kept by the *Employer* on a weekly basis, and these will be used for assessment purposes.

3.6 TRAINING WORKSHOPS

- Induction will be provided by the employer for all personnel entering the site.

4. HEALTH, SAFETY, ENVIRONMENT AND QUALITY ASSURANCE

4.1 HEALTH AND SAFETY RISK MANAGEMENT

The Supplier shall at all times comply with the health and safety requirements prescribed by law as they may apply to the *services*.

The Supplier shall, when coming on site always abide by the Lifesaving Rules and COVID-19 safety requirements. These will be provided by the *Employer* on the start of the contract. The Supplier shall also abide by Safety, Health and Environmental Specifications for Contractors Procedure, which will also be provided by the *Employer*.

The *Employer* follows an accident/ incident prevention policy that includes the investigation of all accidents/ incidents involving personnel and property. This is done with the intention of introducing control measures to prevent recurrence of the same incidents. The Supplier is expected to fully co-operate to achieve this objective. Refer to 32-95_Environmental, Occupational Health and safety Incident Management Procedure.

The Supplier implements a safety plan and maintains the safety system until completion of the whole delivery. The plan, will as a minimum, contain PPE information, written safe work procedures, job specific risk assessments, safety meetings, etc. The plan will be to the *Employer's* satisfaction and will be accepted prior to the commencement of any work.

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4.2 ENVIRONMENTAL CONSTRAINTS AND MANAGEMENT

The Supplier shall comply with ERI management system. This includes the identification, collection, storage, transportation, and disposal of waste. Hazardous waste shall be disposed of in line with the applicable environmental legislation. It is important to note that all oil and fuel spillages must be cleaned immediately and reported to the project manager as soon as possible. It is the responsibility of the polluter to clean all spillages and for the rehabilitation of the polluted land and the cost associated with that.

4.3 QUALITY ASSURANCE REQUIREMENTS

The Supplier implements a quality system and maintains the quality system until the completion of the whole of the whole delivery. Each delivery to be done as per bending schedule, requested quantity and to be accompanied by material certificate. Any deviations will be corrected to the *Employer's* satisfaction.

The *Project Manager* has the right to stop the delivery if, in the opinion of *Project Manager*, does not meet the specifications and will have a detrimental effect on performance. The Supplier may only continue with work activities when all deficiencies have been corrected to the *Project Manager's* satisfaction. The Supplier shall have no claim against the *Employer* in respect of delay due to the above.

ERI to get samples of bentonite and lime for testing before delivery for confirmation of specification.

The Supplier will deliver according to the *Employer's* standards, specifications, guidelines and procedures. Where no standards, specifications, guidelines and procedures are available, the Supplier will work according to the Generation Quality manual and professional guidelines. Where possible, standards will be reflected in the Task Order.

The employer shall evaluate, control and monitor the performance and effectiveness of the Supplier.

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5. PROCUREMENT

5.1 SITE AND MATERIALS

5.1.1 CORRECTION OF DEFECTS

If there is part of work that the *Employer* is not happy with, this will be indicated to the Supplier and will have to be rectified by the Supplier immediately where reasonably possible or within 5 working days after the defect was reported.

5.1.2 CONTRACTOR'S PROCUREMENT OF PLANT AND MATERIALS

Any equipment, appliances or materials used by the Supplier must conform to the applicable OHSACT safety standards and is to be maintained in a safe and proper working condition. The Project Manager has the right to stop the Supplier's use of any equipment/ cleaning material which, in the opinion of the Project Manager, does not conform to the foregoing.

6. WORKING ON THE AFFECTED PROPERTY

Under no circumstances will the Supplier do the work without proper PPE. The Supervisor on the Supplier's side will make it his duty to make sure that this is properly addressed.

6.1 EMPLOYER'S SITE ENTRY AND SECURITY CONTROL, PERMITS, AND SITE REGULATIONS

Access to site

The Supplier's access to site shall be in line with the Site access procedure. The Supplier shall be required to make an application for his employees to enter site for the duration of the contract, including defects period. The permits shall only be issued once the Supplier's employees have attended the safety induction training and have undergone medical checks. The safety induction will be for the *Employer's* account. The medical checks will be for the Supplier's account.

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6.2 PEOPLE RESTRICTIONS, HOURS OF WORK, CONDUCT AND RECORDS

The *Works* will be carried out on a site-specific basis.

6.3 RECORDS OF CONTRACTOR'S EQUIPMENT

The Supplier's driver should keep record of all the delivery notes. The Supplier is responsible for the safe keeping of all their equipment.

6.4 WORKING HOURS

The Supplier should align deliveries to ERI site working hours. Any late deliveries arrangements should be made with the Project Manager.

Office employees will work as per below hours:

Office hours

Monday to Thursday	:	07H00 to 17H00
Friday	:	07H00 to 17H00
Sat, Sun & P/H	:	As and when required
Lunch break	:	As and when required

NB: Working hours shall remain flexible to alteration, if required

6.5 CONTROL OF NOISE, DUST, WATER AND WASTE

The Suppliers must supply their own dust masks and cloth masks as part of PPE. Drinking water is available on site as well as waste bins for disposing waste.

6.6 LIST OF DRAWINGS

Bidding schedules will be submitted to the Supplier as and when required.

6.7 ACCEPTANCE

This document has been seen and accepted by:

Name	Designation
Thabo Nhleko	Portfolio Manager Civils

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6.8 REVISIONS

Date	Rev.	Compiler	Remarks

6.9 DEVELOPMENT TEAM

The following people were involved in the development of this document:

- Terence Khumalo
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6.10 ACKNOWLEDGEMENTS

None

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