

ADDENDUM: SCOPE OF WORK FOR AUTOSAMPLERS - SAP, PAP AND GRANULATION PLANTS

The following are the changes/amendments to the scope. Amendments are highlighted in red.

FOSRBY-RFP:

Section C

C.1.4. Scope of work Deliverables

- Engineering design, manufacture, supply and install 7 autosamplers in accordance with conveyor belt (dry material) and piping (slurry material) specifications.
- Engineering design, manufacture, supply and install chute/piping, enclosed sample containers to avoid contamination, self-cleaning mechanism for liquid autosamplers, 3 sample containers per sampler, sample splitters per autosampler at applicable conveyor belts and pipes.
- Engineering Design, manufacture, supply and installation as per autosampler requirements of electrical, instrumentation & control requirements including alarm system or similar, to alert DCS operator that the sample container is full as well as an interlock or similar to stop sampling when sample container is full.
- Approved for Construction drawings (AFC) for all engineering disciplines.
- Mechanical and Electrical Data Sheets for equipment.
- Operating & Control Philosophy.
- Construction Bill of Quantities (BOQ) & (detailed) Bill of Materials (BOM) for all applicable engineering disciplines.
- Project Schedule.
- Construction and installation management.
- Riggers and Cranage.
- Pre-commissioning & commissioning.
- Provision of nameplates for the equipment.
- Training of maintenance and process teams.
- Hand Over documents and signing off.
- Supply of all material, equipment, tools, consumables and trained labour.
- Compliance at all times to the Foskor SHE requirements and permit systems.

C.3. Foskor Specifications

All work listed in this scope of work shall be completed in accordance with the latest specifications listed below.

Those specifically applicable to this Tender is **marked with “YES”**, **however** it does not exclude other specification listed or implied, and it remains the Tenderer's responsibility to ensure that work execution and tender prepared is in line and meets the requirements of all standards indicated or not.

Number	Title / Description	Version	Applicable
OTHER STANDARDS on this Tender			
APPLICABLE FOSKOR SPECIFICATION on this Tender			
E003	Industrial Electrical Installations	Latest	Yes
EC1	Installation, Testing and Commissioning of Electrical Equipment	Latest	Yes
FC005	General Earth Works to Plant and Building	Latest	
FD001	Design Criteria for Structures	Latest	
FG001	General Requirements for Projects	Latest	Yes
FL001	Design & Fabrication Criteria for Ladders & Walkways	Latest	
FM001	General Mechanical Specification	Latest	Yes
FM003	Welding of Fabricated Equipment	Latest	Yes
FM002	Rubber Lining of Vessels and Piping	Latest	
FM003	Welding of Fabricated Equipment	Latest	Yes
FM432	Insulation of Vessels and Piping	Latest	
FQ001	General Engineering Quality Requirements	Latest	Yes
FQ002	Non-Destructive Testing	Latest	Yes
FS001	Specification for the Fabrication & Erection of Structural Steel Work	Latest	
FS002	Specification of Roof and Side Cladding	Latest	
FV001	Requirements Vessels, Tanks and Heat Exchangers	Latest	
GM5	Pipe Standards Including Auxiliary Equipment	Latest	Yes
GM6/COP9	Engineering Drawing and Document requirements	Latest	Yes
GQ1	Quality Control Procedure for Contractors	Latest	Yes
GS1	Structural Steelwork and Plate Work Fabrication and Erection	Latest	
MC001	Corrosion Protection Colour Coding	Latest	Yes
MC002	Scope of Corrosion Protection Richards Bay	Latest	Yes
MC004	General Plant Painting Specification Low Temperature	Latest	Yes

MC006	Repair/Touch-up of Damaged Steelwork	Latest	Yes
MC009	General Plant Protection High Corrosive Areas	Latest	Yes
MC010	Painting Tank Grillage	Latest	
SS-000000-C-006	General specification for concrete construction	Latest	
SS-000000-C-007	Concrete specification	Latest	
SS-000000-C-012	Grouting	Latest	
SS-000000-Q-001	General quality requirements	Latest	Yes
SS-000000-S-001	Fabrication and erection of structural steelwork	Latest	Yes
DD-000000-C-001	Civil design criteria	Latest	
DD-000000-S-001	Structural design criteria	Latest	Yes

C.4. Project Requirements

The main works is to provide principal consultant services as per “Guideline for Services and Processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000, (Act No.46 of 2000)”, latest revision, for the AUTOSAMPLERS - SAP, PAP AND GRANULATION PLANTS to include the following:

1. Provision for complete engineering design, manufacture, supply and installation of seven (7) autosampler units.
2. Provision for complete engineering design, manufacture, supply and installation as per autosampler requirements of electrical, instrumentation & control requirements including alarm system or similar to alert DCS operator that the sample container is full as well as an interlock or similar to stop sampling when sample container is full.
3. Provision for preparation of all As Built Drawings for mechanical and electrical/instrumentation scope.

4. Provision for complete engineering design, manufacture, supply and installation of chute/piping, enclosed sample containers to avoid contamination, self-cleaning mechanism for liquid autosamplers, 3 sample containers per sampler, sample splitters per autosampler at applicable conveyor belts and pipes.

Tenderer shall further ensure that all work is executed with a detailed quantity of work, cost and/or detailed design is provided and complies with the specifications as set out in this document.

C.6.2 Technical Data:

Autosampler Technical Data				
Sulphuric Acid Plant Dry Solid Product	Conveyor location		CV10	
	Material Type		Granular Sulphur	
	Cutter Speed	m/s	0.58	
	Belt Speed	m/s	1	
	Belt width	mm	750	
	Material nominal top size	mm	6	
	Percentage moisture	%	<1.5	
	Bulk density	t/m ³	1.28-1.44	
	Throughput	tph	Nominal	Maximum
	170		240	
	Sampler cutter width	mm	30	
	Primary sample increment size/cut	kg/cut	2.44	3.45
	Recommended Sampling Frequency	minutes	15	
	Composite sample per 4 hours	g	500g	
Granulation Plant Dry Solid Product	Conveyor location		CO5	
	Material Type		MAP Fertiliser	
	Cutter Speed	m/s	0.58	
	Belt Speed	m/s	1.7	
	Belt width	mm	600	

	Material nominal top size	mm	3.35	
	Percentage moisture	%	1	
	Bulk density	t/m ³	1.85	
	Throughput	tph	Nominal	Maximum
	60		62	
	Sampler cutter width	mm	30	
	Primary sample increment size/cut	kg/cut	0.86	0.89
	Recommended Sampling Frequency	minutes	15	
	Composite sample per 2 hours	g	500g	
Phosphate Rock Dry Solid Product	Conveyor location	CV950		
	Material Type	Phosphate Rock		
	Cutter Speed	m/s	0.58	
	Belt Speed	m/s	2	
	Belt width	mm	750	
	Material nominal top size	mm	0.2	
	Percentage moisture	%	1	
	Bulk density	t/m ³	1.85	
	Throughput	tph	Nominal	Maximum
	132		200	
	Sampler cutter width	mm	30	
	Primary sample increment size/cut	kg/cut	1.90	2.87
	Recommended Sampling Frequency	minutes	15	
	Composite sample per 4 hours	g	500g	

Phosphate Rock Dry Solid Product	Conveyor location		CONV 4	
	Material Type		Phosphate Rock	
	Material Type	Phosphate Rock		
	Cutter Speed	m/s	0.58	
	Belt Speed	m/s		2.5
	Belt width	mm		750
	Material nominal top size	mm		0.2
	Percentage moisture	%		1
	Bulk density	t/m ³		1.85
	Throughput	tph	Nominal	Maximum
	132		861	
	Sampler cutter width	mm		30
	Primary sample increment size/cut	kg/cut	1.90	12.37
	Recommended Sampling Frequency	minutes		15
	Composite sample per 4 hours	g	500g	
Phosphate Rock Dry Solid Product	Conveyor location		Phosphate Rock CONV 9	
	Material Type		Phosphate Rock	
	Cutter Speed	m/s	0.58	
	Belt Speed	m/s		2.5
	Belt width	mm		750
	Material nominal top size	mm		0.2
	Percentage moisture	%		1
	Bulk density	t/m ³		1.85
	Throughput	tph	Nominal	Maximum
	132		200	
	Sampler cutter width	mm		30

	Primary sample increment size/cut	kg/cut	1.90	2.87
	Recommended Sampling Frequency	minutes		15
	Composite sample per 4 hours	g	500g	
Gypsum line Liquid Slurry Product	Flowrate: 0 – 1 500m3/hr Temp < 50degC Pipe size: 4inch 500ml per 2hours			
Buoyant line Liquid Slurry Product	Flowrate: 0 - 450m3/hr Temp < 50degC Pipe size: 4inch 500ml per 2hours			

All work listed in this scope of work shall be completed in accordance with the latest copies specifications as listed above. It is the responsibility of the Tenderer to ensure that the Tenderer has the latest copies of specifications as listed above for the execution of this project.

On completion of the project the Tenderer must certify all documentation and drawings for correctness and conformance, specifying which standards and regulatory acts these conform to.

Section D – Bill of Quantities



PROJECT NAME: AUTOSAMPLERS - SAP, PAP AND GRANULATION PLANTS

PROJECT NUMBER:

CONTRACT NUMBER:

PROJECT SUPERVISOR: Lerato Raphiri

PROJECT CLIENT: SAP, PAP AND GRANULATION PLANTS

	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Design, Supply, Installation, Commissioning and Training for AUTOSAMPLERS - SAP, PAP AND GRANULATION PLANT: As defined in the Scope of Work			<u>Per item</u>	
P&G	Preliminary and General: Any other costs associated with the project (Please provide a detailed breakdown on a separate sheet)	Sum			R
1	Engineering Design				
	1.1 Engineering Design - Solid dry product (PAP, SAP and Granulation)	Sum			R
	1.2 Engineering Design - Liquid slurry product (Effluent & Gypsum Lines)	Sum			R
	Engineering design & Project Management - should include all relevant discipline-specific documents.				
2	Supply & Execution				
	2.1. Autosampler - Solid dry product (PAP, SAP and Granulation)				
	2.1.1 Manufacturing and supply of autosamplers & sample containers, splitters and chutes/piping				
	2.1.1.1. SAP Autosampler	Sum			R
	2.1.1.2. PAP Autosamplers	Sum			R
	2.1.1.3. Granulation Autosampler	Sum			R
	2.1.2 Delivery/transportation	Sum			R
	2.1.3 Electrical & Instrumentation requirements	Sum			R
	2.1.4 Installation requirements	Sum			R
	2.1.5 Rigging & Cranage and methodology	Sum			R
	2.2. Autosampler - Liquid slurry product (Effluent & Gypsum Lines)				
	2.2.1. Manufacturing and supply of autosamplers & sample containers, splitters and chutes/piping				
	2.2.1.1. Effluent line	Sum			R
	2.2.1.2. Gypsum line	Sum			R
	2.2.2 Delivery/transportation	Sum			R
	2.2.3 Electrical & Instrumentation requirements	Sum			R
	2.2.4 Installation requirements	Sum			R
	2.2.5 Rigging & Cranage and methodology	Sum			R
3	Commissioning and Training				
	3.1 Commissioning and handover documents	Sum			R
	3.2 Training	Sum			R
TOTAL :					

Tender Signature and Company Stamp: