

	Specifications	Arnot Power Station
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Title: **Supply and Deliver of G5 for the maintenance of ash dam roads at Arnot Power Station**

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1. Purpose

This document provides a specification for the supply and delivery of G5 gravel, G7 gravel, and gravel wearing course material for the maintenance of ash dam roads at Arnot Power Station for a period of three (3) years on an as-required basis. Additionally, this specification outlines the technical requirements for quality assurance and testing requirements. The locality of Arnot Power Station is shown in Figure 1.

Material shall only be supplied and delivered against a written order or call-off instruction issued by the *Employer*, which shall state the material class, quantity, delivery point, and required delivery period. Unit rates shall be fully inclusive of sourcing, winning, processing, loading, hauling, off-loading, and all testing and quality assurance obligations placed on the *Contractor* by this document.

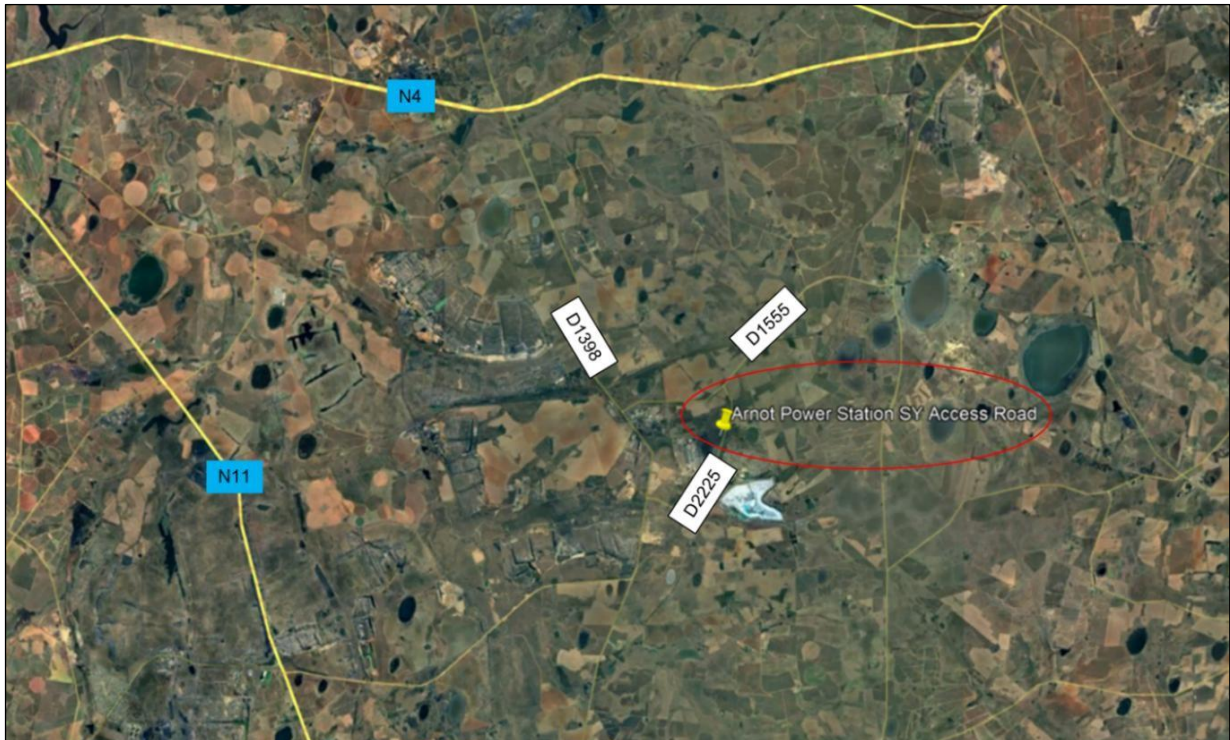


Figure 1: Arnot Power Station Locality

2. Definitions

Definition	Description
Employer	Eskom
Controlled disclosure	Controlled disclosure to external parties (either enforced by law, or discretionary).
Eskom Engineer	Eskom-appointed Civil Engineer
Contractor	Service provider appointed to carry out this scope of works
Task Order	A task order is a written instruction to proceed with the task as stipulated on the task order. The task order will only be valid if a “45 number” appear on the task order. The “45 number” will serve as the order number for the task and need to be stated on the invoice for the work done as per task order.

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3. Contractor Requirements

The *Supplier* is required to:

- Supply and deliver G5 gravel material, G7 gravel material, and gravel wearing course material complying with COTO (2020). This shall include sourcing, loading, hauling, and off-loading at designated points on site.
- Provide the *Employer*, for acceptance and approval, with SANAS-accredited laboratory test results for samples from each source stockpile identified for supply under each Task Order, prior to material delivery to site.

4. Applicability

This document shall apply to the following departments at Arnot Power Station.

- Auxiliary Engineering.
- Operating Support.

5. Normative/Informative References

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

5.1 Normative

- SANS 3001: Civil Engineering Test Methods
- TMH 5: Sampling Methods for Road Construction Materials SANS 3001
- TRH20: The Structural Design, Construction and Maintenance of Unpaved Roads

5.1 Informative

- COTO 2020: Standard Specifications for Road and Bridge Works for South African Road Authorities

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6. Scope of Work

6.1 General

The *Contractor* shall be responsible for the sourcing, procurement, loading, hauling, and off-loading of all materials specified in this document. All materials supplied shall be subject to inspection, sampling, and testing as set out in this document. The *Contractor* shall bear all costs of sampling, testing, and reporting required to demonstrate compliance of the material.

6.2 Gravel Requirements

Material Composition

The *Contractor* shall supply and deliver the following materials to the site in quantities stipulated in each Task Order, to the delivery points instructed by the *Employer*. The total quantities for the duration of the contract are shown in Table 1.

Table 1: Required Materials

Material Class	Quantity	Specification
G5 gravel material	20 000 m ³ (36 000 t)	Table 2 of this document
Gravel wearing course	20 000 m ³ (38 000 t)	Table 3 of this document
G7 gravel material	14 000 m ³ (19 600 t)	Table 4 of this document

Tables 2, 3, and 4 outline the material requirements for G5, gravel wearing course, and G7 quality materials, respectively, in accordance with the COTO (2020) Standard Specifications. G5 material shall comply to the requirements of either G5A or G5B classification. Compliance shall be verified by testing undertaken by a SANAS-accredited laboratory.

All material delivered to site shall be free from any contamination including but not limited to rubble, vegetation, spillage and steel material. Contaminated material during delivery will not be accepted.

More details relating to the material specification can be obtained from COTO (2020): Standard Specifications for Road and Bridge Works for South African Road Authorities

Table 2: G5 Gravel material requirements (COTO, 2020 Table A4.1.5-4)

Grading Envelope (Applicable to G5A Material)	
Sieve Size (mm)	Percentage passing sieve, by mass
50	100
37.5	85 - 100
20	61 - 91
14	48 - 82
5	31 - 66
2	20 - 50
0.425	10 - 30
0.075	5 - 15

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Other properties (Applicable to both G5A and G5B material)		
Description of material		G5A: Medium to hard rock, or boulders that require multistage crushing and screening. G5B: Gravel with pebbles and small cobbles, or gravel with larger cobbles, boulders and lumps of hard material, or soft rock that require single- or two-stage crushing, or grid rolling. Pedogenic materials that require dozer ripping.
Grading Modulus (GM)		1.75 – 2.5
Atterberg Limits	Liquid Limit	≤ 30
	Plasticity index (PI)	≤ 10
	Linear shrinkage (LS)	≤ 5%
CBR at 95% of Maximum Dry Density (MDD)		≥ 45%
Swell at 100% of MDD		≤ 0.5%
Maximum particle size		50mm

Table 3: Gravel wearing course requirements (COTO, 2020 - Table A4.1.5-11)

Property	Requirement
Description of material	Natural gravel or crushed material
Maximum particle size	50mm
Oversize index (Io)	≤5%
Shrinkage product (Sp)*	100 - 240
Grading coefficient (Gc)**	20 - 35
Plasticity index (PI) on the P0.425 fraction	6 - 12
Strength (CBR at 95% of MDD)	≥25%
Treton impact value	20% - 65%

Io = Percent retained on 37.5mm sieve.

Gc = (Percent passing 28mm sieve – percent passing 2.0mm sieve) x percent passing 5.0 mm sieve/100.

Sp = Linear shrinkage x percent passing 0.425mm sieve.

Table 4: G7 Gravel material requirements (COTO 2020 - Table A4.1.5-3)

Property	Requirement
Maximum particle size	100 mm
Grading modulus (GM)	0.75 - 2.5
Plasticity index (PI) on the P0.425 fraction	≤ 3xGM +10
CBR at 93% Mod AASHTO	≥15%

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7. Quality and Assurance

7.1 Source Approval

The following requirements shall apply for source approval:

- The *Contractor* shall demonstrate access to a minimum of one (1) quarry/borrow pit sources that is legally authorised to win and sell the specified materials. For the proposed source(s), the *Contractor* shall submit
 - A valid mining permit or mining right issued by the DMRE, together with a valid environmental authorisation, where the tenderer operates the source; or
 - A signed supply agreement accompanied by a legally authorised commercial quarry, together with that quarry's valid mining permit/right and environmental authorisation.
- The *Contractor* shall demonstrate the compliance of all three (3) material classes required by means of quarry sheets from the proposed source(s) containing SANAS-accredited laboratory test results, not older than six (6) months.
- The *Contractor* shall provide an indication of the available stockpile quantities and the quarry's capacity to sustain supply for the contract duration.

The *Employer* shall review the above-mentioned documentation for approval. The *Employer* reserves the right to inspect any proposed or approved quarry.

Any proposed change of quarry during the duration of the contract shall be submitted to the *Employer* with the requirement outlined above for approval. Material delivered from an unapproved quarry/source shall be deemed non-conforming and shall be removed from site and replaced by the *Contractor* at the *Contractor's* cost.

The *Employer* may withdraw the approval of any quarry/source where verification testing indicates that material from that quarry no longer complies with the specification outlined in this document.

7.2 Delivery and Logistics Management

The following shall apply regarding delivery and logistics:

- The *Contractor* shall dedicate (by ownership or contract) a tipper fleet adequate (at least 34 tons) for the material delivery required under this contract, with functional satellite/GPS tracking on every delivery vehicle. The *Contractor* shall grant the *Employer* access to such tracking records for the full contract duration to allow the *Employer* to verify the movement of any delivery truck from the approved quarry to site. The use of untracked vehicles, the disabling or manipulation of tracking devices, or the refusal or failure to grant the *Employer* access to tracking records shall constitute a material breach of the contract.
- Delivery coordinates are as follows: 25°56'53.43"S; 29°49'2.44"E
- The *Contractor* shall be registered on the Tontrac platform and shall grant the *Employer* electronic access.
- Every load delivered to site shall be weighed by the *Employer's* weighbridge for verification of quantities using the Tontrac platform.
- Deliveries shall be made on a written order by the *Employer* and only to the delivery points designated by the *Employer*.
- The *Contractor* shall comply with all site access, security, health, safety and environmental requirements applicable at Arnot Power Station, including induction requirements for drivers.

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- The *Contractor* shall take all reasonable measures to prevent contamination, spillage, and degradation of the material during loading, hauling, and off-loading, including the covering of loads where required.
- The *Contractor* shall provide the *Employer*, for acceptance and approval, with SANAS-accredited laboratory test results for samples from each source stockpile identified for supply under each Task Order, prior to material delivery to site.

7.3 Material Handling and on-Site Stockpiling

The following stockpiling requirements shall apply:

- Stockpiles shall be located only in areas designated by the *Employer*;
- Separate material classes shall be stockpiled separately, clearly marked and identified, and shall not be intermixed;
- Stockpiles shall not exceed 2m in height and shall be protected against erosion, contamination, and compaction.

7.4 On-Site Verification Testing

The following on site verification shall apply:

- The *Employer* shall conduct sampling and testing of delivered materials on an as-required basis for the duration of the contract.
- Where the materials laboratory results indicate non-compliance, the affected material shall be rejected, removed from site and replaced with compliant material at the *Contractor's* cost.
- All material delivered to site shall be free from any contamination including but not limited to rubble, vegetation, spillage and steel material. Contaminated material during delivery will not be accepted. The *Contractor* shall bear all costs related to the material removal from site and replacement with compliant material.

8. Document Acceptance

This document has been seen and accepted by:

Name	Designation
RC Mosehla	Auxiliary Engineering Manager
A Tsitsa	Senior Engineer – Civil Engineering
V Tshabane	Senior Advisor Production
T Mokgatle	Engineering Manager
T Maxase	Operations Middle Manager

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9. Revisions

Date	Rev.	Compiler	Remarks
06 August 2026	00	HJ Mathebula	Document created
17 August 2026	01	HJ Mathebula	<u>Amendments:</u> • Removal of <i>Contractor's</i> provision for a laboratory due to conflict of interest. • <i>Employer's</i> weighbridge to be used for delivery quantity verification.

10. Acknowledgements

- A Tsitsa – Senior Engineer – Civil Engineering
- V Tshabane – Operating Support

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