



Annexure E

TRANSNET ENGINEERING

TECHNICAL SPECIFICATION FOR MINED SILICA SAND (GRADE B)

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SUMMARY OF REVISION

First issue-: 23 May 2022

The following revisions have been made in this version:

Change	Description
00	First version
00	Second revision with more detailed information

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DOCUMENT CONTROL

Distribution List

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1. Scope

The purpose of this specification is to request the supply of mined Silica sand which has basic properties required to make green sand mould. The silica sand should be able to give good sand properties such as Flowability, green strength, permeability, and the good refractoriness when they are mixed with bentonite and coal dust. The silica sand grains must have good permeability (B-grade) and also should have high refractoriness of above 1550°C

2. Technical Requirements

2.1 Typical Chemical properties:

Silica as SiO ₂	98% Min
Aluminium as Al ₂ O ₃	1.5% Max
Total Iron as Fe ₂ O ₃	0.25% Max
Titanium as TiO ₂	0.15% Max
Phosphorus as P ₂ O ₅	0.05% Max
Calcium as CaO	0.09% Max
Magnesium as MgO	0.01% Max
Sodium as Na ₂ O	0.02% Max
Potassium as K ₂ O	0.52% Max

2.2 Material properties

CHARACTERISTICS	ASTM SPECIFICATION	ACCEPTANCE STANDARD
AFS	50 – 60	Test results
Clay content (A.F.A)	2% MAX	Test results
Fines No.	60-80	Test results
Moisture	0.10% MAX	For info only
Temperature	35° MAX	Test results
Total Fines	20% Max	Test results
Total Sand Retained on 3 adjacent cells	60% Min	Test results
LOI	0.5% MAX	Test results
Sintering Temperature	1500°C	Test results

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3 General Requirements

- 3.1** The bidder shall indicate if they cannot comply with each clause and subclause of this specification.
- 3.2** Bidders shall provide within the tendering period complete and detailed information as required in this specification, to enable clear and acceptable assessment and adjudication of their offers.
- 3.3** Capability and facility audit will be undertaken prior to final award.

4 Transnet's Obligations

- 4.1** Transnet shall avail relevant personnel for briefing prior to award of the tender to potential bidders.
- 4.2** Transnet shall provide relevant technical specification of the item required.

5 Bidder's Obligations

- 5.1** The tenderer shall be responsible for the following: -
 - 5.1.1** Provide indicative prices of the work that is required for information purposes.
 - 5.1.2** Provide the necessary technical support, know-how and quality standards required
 - 5.1.3** The bidder must provide a budget quote (indicative price) per task tabulated in the introduction
 - 5.1.4** The sand will be delivered with the secured truck to avoid the sand being exposed to rain/water prior introduced to sand system.

6 SHREQ: Safety, Health, Risk, Environment, Quality

- 6.1** The bidder shall indicate all health and safety hazards associated with the delivery of silica sand.
- 6.2** The supplier shall provide the material safety datasheet (MSDS's) and technical material datasheet each time the delivery of silica sand is made.
- 6.3** The supplier shall have a quality management plan in place (guided by ISO: 9001 international specification)

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7 Compliance Checklist to be completed by all bidders

Item No.	Description	Ability to comply. (Yes/No)
1.	Provide delivery using a Tipper truck for the convenience on off-loading of sand.	
2.	Provide support and information regarding B-grade of silica sand in order to produce moulds that conform to product requirements.	
3.	Share the expertise and knowledge with regard to the sourcing of silica sand when necessary.	
4.	Have a quality management plan in place (guided by ISO: 9001 international specification)	
5.	Supply completed delivery note with MSDS's and technical material datasheet.	

8 Document Authorities

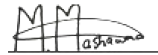
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