





TE-IMS-PEMM P&E KDS-SPEC-066 Specification

Description: (Specification for manufacturing, supply and installation of shaving chute, shaving crusher and conveyor for the TE Wheels Business)				
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Location:	Transnet Engineering plants as stipulated in the RFP			

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1. Scope of Work

This specification requirement covers all the requirements that will be needed to inform the service provider to carry out what is expected from him/her: The contract will be awarded as a turnkey project and the contractor will be responsible for all the work specified.

Only bidders that have a valid certification or letter of competency from the OEM (Hegenscheidt-MFD) indicating that the bidder is certified or competent to work on the wheel portal lathes will be considered for award. A copy of the certificate or letter must be submitted with the tender.

This specification states the minimum requirements relating to the work and in no way absolves the service provider from responsibility for sound engineering practice. Any omissions or sub-standard requirements of this specification must be brought to the attention of Transnet Engineering KOEDOESPOORT at tender stage and optional prices for addressing such omissions must be provided.

The service provider shall supply all the labour, tools, material, equipment, consumables, facilities, testing and supervision required for the supply of the specified equipment at site during erection, pre-commissioning and commissioning activities.

2. Site Inspection

Tenderers must visit the site to familiarize themselves with all the aspects involved relating to the project that must be done. This must be arranged via Transnet Engineering Contract Manager.

3. Information Required

Tenders shall not be considered if full particulars of all relevant equipment and works requested are not submitted at the tender stage, to ensure an objective assessment of the offer can be made. Tenderers shall confirm that the items that they are offering comply at a standard not less than the minimum required requirement asked for in the specifications. Tenderers must comply with these specifications, but alternative offers may, in addition, also be submitted. Such alternative offers must be fully motivated and substantiated.

4. Technical Requirements:

All equipment and installations whether detailed in this specification or not shall comply with the requirements of the Occupational Health and Safety Act 85 of 1993 as amended.

5. Operational Parameters:

5.1 Environment:

The equipment will be required to operate in South African coastal and inland climatic conditions:

The crusher and conveyor will be located in a wheel shop where high levels of vibration and industrial air pollution exist. No temperature control or air conditioning exists.

The power supply to the crusher and conveyor and other machines is of the 380V/50Hz industrial type and is subjected to switching voltage spikes and unplanned power failures.

6. Specific Requirements:

ITEM NO.	REQUIREMENTS	DETAILS OF OFFER Comply (Yes) / Do not comply (No)
	Specification for manufacturing, supply and installation of shaving chute, shaving crusher and conveyor for the Wheel Business.	
1.	Scope of work:	
1.1	Design, manufacturing, supply, delivery, installation of a shaving <u>chute</u> for a wheel portal lathe.	
1.2	Design, manufacturing, supply, delivery, installation shaving crusher for a wheel portal lathe.	
1.3	Design, manufacturing, supply, delivery, installation of a chip conveyor system for a wheel portal lathe.	
1.4	Electrical installation and connection for equipment.	

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1.5	Any civil works that might be required should be provided for. Where changes or modifications to the machine foundation are required the design must be done by a registered professional structural engineer and the drawings must be submitted to Transnet. The foundation must comply to SANS 2001 CC1: 2012 and the MPA strength testing sample to be taken on test tube and submitted to SANAS accredited testing laboratory samples taken after 7 days, 14 days and 28 days after repairs of the floor to verify that repairs done meet the minimum design MPA requirements and results handed to project manager Transnet.	
1.6	Training of personnel.	
1.7	Maintenance on the system during guaranteed period.	
1.8	Documentation.	
1.9	Testing and commissioning of installed equipment.	
2.	Shaving chute:	
2.1	The shaving shoot shall be made of steel plate and shall be bolted together for ease of maintenance. Sheet thickness shall be minimum 3 mm in thickness.	
2.2	The shoot shall guide the shavings effectively into the crusher.	
2.3	The shoot shall ensure a smooth flow of the shavings from wheel portal lathe.	
2.4	All dimensions and sizes shall be taken on site to determine the size of the equipment that need to be manufactured and to be installed.	
2.5	All metal parts to be painted with undercoat and 2 x final coats of high gloss enamel with colour machine green.	
3.	Shaving crusher:	
3.1	The crusher shall have adequate power to crush shavings from steel wheels with hardness of 350HBN and approximate dimensions up to 2mm thick x 20mm wide.	

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3.2	Designed in such a manner whereby the shavings are drawn into the unit and cut into approximately 50 to 100mm long pieces.	
3.3	A crushing capacity of not less than 300 kg shavings per hour is required.	
3.4	The crusher shall have minimum motor power of 5.5kW with a forward and reverse switch to obviate jamming of shavings.	
3.5	The tenderer shall provide a safety system to shut the crusher down in the event of an unsafe situation.	
3.6	All metal covers to be painted with undercoat and 2 x final coats of high gloss enamel with colour machine green.	
4.	Chip conveyor:	
4.1	The system shall ensure a smooth flow of the crushed chips.	
4.2	The conveyor system shall consist of 2 fully covered, heavy duty conveyors i.e., one to bring the crushed chips out of the pit and one to deliver the crushed chips into the chip bin.	
4.3	Both conveyors shall be 500 to 550 mm wide with a cover height of 300 to 350 mm.	
4.4	Each conveyor shall have a forward and reverse switch with variable speed control. The rotation speed shall ensure effective saving removal.	
4.5	All metal covers and framework to be painted with undercoat and 2 x final coats of high gloss enamel with colour machine green.	
5.	Electrical installation and connections:	
5.1	Electrical system to be designed within all aspects of safety to the shaving crusher and to protect against injuries to personnel. Totally integrated to the existing control panel of the Hegenscheidt wheel portal lathes (sequence starting).	

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5.2	The shaving crusher and Chip conveyer system shall have safety and emergency buttons and a 3 lock – out system fitted.	
5.3	All electrical equipment to comply fully with latest SANS specifications. (SANS 10142 Part 1 latest).	
5.4	Electrical system to be designed within all aspects of safety to the components and to protect against injuries to personnel e.g., short circuit protection, overload protection and shutdown of the machine when any component of the conveyor system fails.	
5.5	All cabling shall be SWA cables, and all other wiring shall be installed in steel conduit and steel Sprague.	
5.6	All cables shall be fitted with the correct size steel glands and shrouds at all termination points.	
5.7	Sprague shall be fitted with steel connecting glands at all termination points.	
5.8	All electrical boxes shall be steel. (Not plastic shall be allowed).	
5.9	All saddles, conduit and sprague shall be steel.	
5.10	All conduits/Sprague shall be properly secured to the surrounding foundation or equipment.	
5.11	All electrical cables and wiring shall be properly numbered according to the electrical drawings	
5.12	The electrical/electronic installation shall be supplied with electrical compliance certificate.	
6.	Documentation:	
6.1	The following documentation shall be submitted from winning bidder before any manufacturing or installation starts:	
6.1.1	Detailed design drawing regarding the crusher-conveyer system, indicating all dimensions and equipment used.	
6.1.2	The proposed design shall be signed off by a professional mechanical engineer.	

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6.1.3	Detailed electrical drawings/Schematics indicating wire sizes, wire number, all protection and equipment.	
6.1.4	All the above-mentioned documents shall be counter signed by Transnet before manufacturing or installation starts. This shall in no way absolve the contractor from professional responsibility.	
6.2	The following shall be supplied on the day of commissioning:	
6.2.1	3 sets off hard copies each with a disc containing documentation in PDF Format.	
6.2.1.1	Operating Manual.	
6.2.1.2	Maintenance Manual.	
6.2.1.3	Electrical Schematics.	
6.2.1.4	Mechanical Drawings.	
6.2.1.5	Parts List.	
6.3	Calibration certificates for all instruments used for the issue of Electrical COC and used during final commissioning.	
6.4	Electrical COC for installation.	
7.	Training.	
7.1	The supplier shall offer formal training to Operators and maintenance artisans according to the training manuals of the equipment supplied.	
7.2	The supplier shall also indicate the time needed for training. Training shall be for 8 persons. (4 x operators and 4 x maintenance personnel per installation site).	

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8.	Maintenance	
8.1	The supplier shall indicate the maintenance requirements and frequency of the equipment.	
8.2	Servicing of the equipment during guarantee period shall be included in the price.	
8.3	Transnet Engineering will monitor the technical performance, as well as the effectiveness of the maintenance service during the guarantee period.	
9.	Guarantee:	
9.1	The supplier shall guarantee for a period 12 months after successful commissioning of the new Shaving chute, Muncher and Conveyer System that all components, plant equipment and material are new and fit for the specific purpose which they are purchased, and free from any defects in design, workmanship and material, and are in strict accordance with the contract, unless otherwise agree in writing.	
9.2	The supplier shall agree to replace at his/her cost any defective items discovered within the guaranteed period.	
9.3	The supplier shall clearly stipulate the nature of the guarantee and how long it will take their maintenance staff to be on site. Transnet Engineering requires a response time of no more than 24 hours.	
9.4	Should the supplier fail, when called upon, to make good or remedy a defect (under guarantee or declared inherent) within a reasonable time, Transnet Engineering may affect the repair and thereafter recover from the supplier all cost and expenses associated with the supplier.	
10.	General:	
10.1	A high South-African manufacturing and supply content of the portal-lathe Shaving Crusher and conveyor is preferred.	
10.2	Tenderers may however tender for partially or completely imported equipment. Tenderers to state which equipment or portions of	

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	equipment will be supplied locally, and what the expected value of this equipment is.	
10.3	All the parts of the system shall be designed and installed in a manner for easy installation and removal i.e. parts to be bolted together and not welded together.	
10.4	The Technical Officer reserves the right to have the Shaving Crusher and conveyor belt proposal checked independently by a third party.	
10.5	All offers shall be complete in every respect of this specification. Only complete tenders shall be considered.	
10.6	It might be required that individual bidders shall give a presentation regarding the equipment that will be supplied.	
10.7	All material used shall be SANS approved, A-grade first class.	
10.8	All work delivered shall be of a high standard.	
10.9	All rubble shall be removed on a daily base.	
11.	Price Schedule:	
11.1	Bidders to give a full price breakdown for the individual areas identifying all equipment that shall be supplied and work that they will perform.	
12.	TESTING AND COMMISINING	
12.1	Commissioning and testing of the shaving crusher and conveyor belts shall be done by the tenderer and a commissioning certificate signed off by Transnet Engineering.	
12.2	As this project is “Turn-Key” the successful tenderer is responsible for the design, manufacturing, installation and commissioning. The complete project team, local business and PEMM responsible persons will participate in final commissioning.	