

RFQ / TENDER

Tender No: AGG175



Vendor No: 11001386

BOARD LIST
BOARD LIST
TRANSNET FREIGHT RAIL
PROCUREMENT DEPARTMENT
2000

Purchaser : Antony Goldstone
Telephone : 033 897 2190
Fax Number: 086 522 6399

Please quote reference:
E60/6000616804

Deliver to:
The Manager
TRANSNET FREIGHT RAIL
INFRA - ELECTRICAL - DURBAN
MR THEMBA KWANYANA 083-290-0760
4000 120 EEL ROAD, BAYHEAD, DURBAN

Closing Date : 08.10.2015
Validity Date : 09.11.2015
RFQ No : 6000616804

10Am

1. RETURN OF QUOTATION/S:

SUPPLY & DELIVERY OF AC & DC LIVE WIRE TESTERS AS PER SPECS

FOR TRANSNET FREIGHT RAIL; INFRA DURBAN .

PaDB REF: CRAC/DBN/19423 TFR REF:DBN/ELECT/01.

QUOTATIONS MUST BE EMAILED: TFR TENDERS DURBAN@transnet.net OR FAXED TO 011-584-1364

1.1 QUOTATION/S MUST BE SUBMITTED PUNCTUALLY AT 10:00 ON OR BEFORE CLOSING DATE AND LATE QUOTATIONS WILL NOT BE CONSIDERED.

1.2 IF POSTED: TFR SUPPLY CHAIN SERVICES TENDER ADMIN OFFICE

100 EEL ROAD
BAYHEAD
DURBAN
4000

1.3, IF DELIVERED BY HAND:

TRANSNET FREIGHT RAIL-SUPPLY CHAIN SERVICES
OFFICE D21; 100 EEL ROAD
BAYHEAD
DURBAN, 4000, TELEPHONE: 031-361-4123 OR 031-361-4023

2. CONDITIONS:

2.2 ANY PURCHASE ORDER PLACED AS A RESULT OF YOUR QUOTATION WILL BE SUBJECT TO THE STANDARD TERMS AND CONDITIONS OF CONTRACT, FORM US7, (LATEST), GENFRAI TENDER CONDITIONS, FORM CSS5 (LATEST) AND

DATE:

SIGNATURE OF TENDERER(S):

CONTACT PERSON:

TEL No:

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CONDITIONS MENTIONED HEREIN.

2.3 TENDERERS MAY OFFER AN EARLIER VALIDITY DATE, BUT THEIR QUOTATION MAY, IN THAT EVENT, BE DISREGARDED FOR THIS REASON.

2.4 TENDERERS ARE REQUIRED TO OFFER ONLY FIRM PRICES. PRICES SUBJECT TO REVIEW IN TERMS OF CLAUSE 32 OF FORM US7 WILL ONLY BE CONSIDERED SHOULD THE DELIVERY PERIOD REQUIRED EXCEED 6 MONTHS.

2.5 BEST DELIVERY TIME MUST BE OFFERED.

2.6 DISCOUNT (TRADE DISCOUNT) CASH DISCOUNT (CONDITONAL DISCOUNT) VALUE VALUE ADDED TAX (VAT) MUST BE SHOWN SEPARATELY.

2.7 TRANSNET RESERVES THE RIGHT TO NEGOTIATE PRICES AND COMMERCIAL ASPECTS AFTER THE CLOSING DATE OF THE QUOTATION.

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2.8 DIRECT DELIVERY INTIMATES DELIVERY BEING EFFECTED INTO THE WAREHOUSE OR THE ACTUAL POINT OF SUPPLY AND SHOULD THEREFORE INCLUDE ANY TRANSPORTATION MODE DEEMED NECESSARY IN EXECUTING THIS METHOD OF DELIVERY BASIS IN ORDER TO MEET THE REQUIRED DELIVERY DATE.

TAX CLEARANCE CERTIFICATES:

The Regulations in terms of the Public Finance Management Act, 1999: Framework for Supply Chain Management as published in Government Gazette No. 25767 dated 5 December 2003, Clause 9 (1) (d), stipulates that the accounting officer or accounting authority of an institution to which these regulations apply must reject any bid from a supplier who fails to provide written proof from the South African Revenue that the supplier either has no outstanding tax obligations or has made arrangements to meet outstanding tax obligations.

Tenderers will be disqualified if a valid tax clearance certificate or written proof from the South African Revenue Service that supplier has made arrangements to meet outstanding tax obligations is not submitted with the tender.

COMPANY DETAILS:

NAME OF COMPANY: _____

CONTACT PERSON: _____

TEL. NO. _____ FAX NO: _____ <

REG. NO. _____

EMAIL ADDRESS: _____

BROAD BASED BLACK ECONOMIC EMPOWERMENT (BBBEE)

Transnet fully endorses and supports the Government's Broad-based Black Economic Empowerment Programme and it is strongly of the opinion that all South African Business Enterprises have an equal obligation to redress the imbalances of the past. Transnet will therefore prefer to do business with local business enterprises who share these same values. Transnet will endeavour to do business with local business enterprises that possess a BBBEE "recognition level" of at least a level 5. Transnet urges Tenderers (large enterprises and QSE's - see below) to have themselves accredited by any one of the various Accreditation Agencies available, who do their BBBEE ratings in accordance with the latest Codes (i.e. those promulgated on 9 February 2007) and whose names appear on the present ABVA (Association of BEE Verification Agencies) - "List of Full Members" as displayed on the ABVA website (www.abva.co.za).

Although no agencies have, as yet, been accredited by SANAS (SA National Accreditation System), Transnet will, in the interim, accept rating certificates of tenderers who have been verified by any of the listed agencies.

Enterprises will be rated by such agency based on the following:

1. Large Enterprises (i.e. annual turnover >R35million:
" Rating level based on all seven elements of the BBBEE scorecard.
2. Qualifying Small Enterprises - (QSE) (i.e. annual turnover >R5million but <R35million:
" Rating based on any four elements of the BBBEE scorecard.

NB:

3. Emerging Micro Enterprises - (EME) (i.e. annual turnover <R5m) are exempted from being rated/verified:

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- " Automatic rating of Level 4 BBEE irrespective of race of ownership, i.e. 100% BBEE recognition
- " Black ownership >50% or Black Women ownership >30% automatically qualifies as Level 3 BBEE, i.e. 110% BBEE recognition
- " EME's should provide certified documentary proof of annual turnover (i.e. audited financials) plus proof of Black ownership if Black ownership >50% or Black Women ownership >30% from the FMF's Auditor/Accounting Officer.

4. In addition to the above, Tenderers who wish to enter into a Joint Venture or subcontract portions of the contract to BBEE companies, must state in their tenders the percentage of the total contract value that will be allocated to such BBEE companies, should they be successful in being awarded any business. A rating certificate in respect of such JV-partners and / or sub-contractor/s, as well as a breakdown of the distribution of the aforementioned percentage must also be furnished

In view of the high emphasis which Transnet places on Broad-based Black Economic Empowerment, Transnet will allow certain preference points for BBEE in the evaluation of all responses. Depending upon the value of the ensuing business award (i.e. below or in excess of R2m), the 80/20 or 90/10 point preference systems will be utilized where BBEE will count out of 20 or 10 respectively in the evaluation process.

EACH RESPONDENT IS REQUIRED TO FURNISH PROOF OF THE ABOVE TO TRANSNET. FAILURE TO DO SO WILL RESULT IN A SCORE OF ZERO BEING ALLOCATED FOR BBEE.

Turnover: Kindly indicate your company's annual turnover for the past year R_____

- " If annual turnover <R5m, please attach certified confirmation from your Auditor/Accounting Officer
- " If annual turnover >R5m please attach original or certified copy of accreditation certificate and detailed scorecard by an ABVA accreditation agency (registered as a "Full Member")

PAYMENT TERMS

The following payment terms will apply as from 1 October 2008.

- " All suppliers will be paid 30 days from receipt of month end statement, i.e. payment term F055.

CONDITIONS:

This quotation is subject to the provisions of the Standard Terms and Conditions of Contract, Form US7, (Latest) and the General Tender Conditions, Form CSS5 (Latest) and any other standard or special conditions mentioned and/or embodied in the quotation request.

SCHEDULE OF REQUIREMENTS

PRICES TENDERED ARE TO BE "DIRECT" AND EXCLUDE VAT.

IN THIS REGARD THE TENDERER'S ATTENTION IS DIRECTED TO PARAGRAPH 16 OF FORM CSS5 (LATEST).

DATE:

SIGNATURE OF TENDERER(S):

.....

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TRANSNET INSISTS ON HONESTY AND INTEGRITY BEYOND REPROACH AT ALL TIMES AND WILL NOT TOLERATE ANY FORM OF IMPROPER INFLUENCING, BRIBERY, CORRUPTION, FRAUD, OR ANY OTHER UNETHICAL CONDUCT ON THE PART OF BIDDERS/ TRANSNET EMPLOYEES. IF, IN THE OPINION OF TRANSNET'S CHIEF OPERATING OFFICER, A TENDERER / CONTRACTOR / SUPPLIER HAS OR HAS CAUSED TO BE PROMISED, OFFERED OR GIVEN TO ANY TRANSNET EMPLOYEE, ANY BRIBE, COMMISSION, GIFT, LOAN, ADVANTAGE OR OTHER CONSIDERATION, TRANSNET SHALL BE ENTITLED TO REVOKE THE TENDER / CONTRACT BY FOLLOWING ITS INTERNAL POLICIES THAT GOVERN THE ACQUISITION PROCESS. IN SUCH AN EVENT TRANSNET WILL BE ENTITLED TO PLACE ANY TENDERER / CONTRACTOR / SUPPLIER WHO HAS CONTRAVENED THE PROVISIONS OF TRANSNET'S BUSINESS ETHICS ON ITS LIST OF EXCLUDED TENDERERS. THIS LIST WILL ALSO BE DISTRIBUTED TO ALL OTHER STATE OWNED ENTERPRISES AND GOVERNMENT DEPARTMENTS.

TRANSNET INVITES ITS VALUED SUPPLIERS TO REPORT ANY ALLEGATIONS OF FRAUD & CORRUPTION OR OTHER UNETHICAL ACTIVITIES TO TRANSNET TIP-OFFS ANONYMOUS, AT ANY OF THE FOLLOWING ADDRESSES / CONTACT NUMBERS:-

TOLL-FREE ANONYMOUS HOTLINE - 0800 003 056
EMAIL - Transnet@tip-offs.com
FAX NUMBER - 0800 007 788
FREEPOST DN 298, UMHLANGA ROCKS, 4320

CONFIDENTIALITY IS GUARANTEED

Item	Qty	Material	Description	R.....
00010	6	AC LIVE LINE TESTERS		Each

Delivery Date: 30.10.2015

FULL DETAILS OF DESCRIPTION

SEE ATTACHED SPECS / REQUIREMENTS

SEE: AGG175_spec sheets for 11 KV TO 33KV AC LIVE LINE TESTERS_BBD7225_VER_2

00020	6	DC LIVE LINE TESTERS		R..... Each
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Delivery Date: 30.10.2015

FULL DETAILS OF DESCRIPTION

SEE ATTACHED SPECS / REQUIREMENTS

SEE : AGG175_spec sheets for BBC2076_VER_3 -3kv DC LIVE LINE TESTER

DATE:

SIGNATURE OF TENDERER(S):



TRANSNET
freight rail

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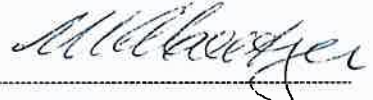
TECHNOLOGY MANAGEMENT

SPECIFICATION

LIVE LINE TESTER (MEDIUM VOLTAGE DETECTOR) FOR USE BETWEEN 11 kV AND 33 kV AC

Appendix 1: To be filled in by Transnet Freight Rail

PREVIEW COPY ONLY

Author:	Chief Engineering Technician Section: Technology Management	B.L. Ngobeni	
Approved:	Senior Engineer Section: Technology Management	L.O. Borchard	
Authorised:	Principal Engineer Section: Technology Management	W.A. Coetzee	

Date: 25 November 2010

Circulation restricted to: Transnet Freight Rail
Technology Management

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1.0 SCOPE

- 1.1 This specification covers Transnet Freight Rail's requirements for live line testers to be used between 11 kV and 33 kV AC.

2.0 APPENDICES

The following appendices form an integral part of this specification.

- 2.1 Appendix 1: Schedule of Requirements.
2.2 Appendix 2: Technical Data Sheet

3.0 STANDARDS AND PUBLICATIONS

The latest versions of the following publications and standards are referred to herein.

3.1 SOUTH AFRICAN NATIONAL STANDARD

SANS 61243-1* Live working - Voltage detectors, Part 1: Capacitive type to be used for voltages exceeding 1kV AC.

4.0 TENDERING PROCEDURE

- 4.1 Tenderers shall indicate compliance with this specification. This shall take the form of a separate document listing all the specification clause numbers indicating clause by clause an individual statement of compliance or non-compliance.
- 4.2 The tenderer shall motivate a statement of non-compliance.
- 4.3 The tenderer shall submit descriptive literature consisting of detailed technical specifications, general construction details and principle dimensions, together with clear illustrations of the equipment offered.
- 4.4 Tenderers shall complete Appendix 2: Technical Data Sheet.
- 4.5 Failure to comply with clauses 4.1, 4.2, 4.3 and 4.4 could preclude a tenderer from consideration.

5.0 SERVICE CONDITIONS

- 5.1 The live line tester (high voltage sensing device) shall be designed to operate under the following environmental conditions:

- Altitude 0 - 1800 meters above sea level.
- Relative Humidity 10% to 90%
- Ambient Temperature Range Minus 10°C to plus 55°C.
- Level of Pollution Heavily salt laden or polluted with smoke from Industrial sources.
- Lightning density 12 ground flashes/km²/annum.

6.0 ELECTRICAL SERVICE CONDITIONS

- 6.1 The live line tester must be designed so that it can operate continuously and safely under the following electrical conditions:

For 11kV Voltage systems:

- 6.1.1 Highest system voltage 12kV
6.1.2 Nominal system voltage 11kV
6.1.3 Frequency 50Hz± 10%

For 33kV traction systems:

- 6.1.5 Highest system voltage 36kV
- 6.1.6 Nominal system voltage 33kV
- 6.1.7 Frequency 50Hz
- 6.2 The Voltage to be detected can also have harmonics superimposed on the 50Hz power frequency component. The Total Harmonic Distortion (THD) on the Voltage can be in the order of 30% comprised mainly of lower order (below 1 kHz) harmonics.

7.0 MECHANICAL SERVICE CONDITIONS

- 7.1 The equipment shall be of robust design to withstand rough handling, shock and vibration when transported in its case over extremely rough roads.

8.0 TECHNICAL REQUIREMENTS OF THE EQUIPMENT

- 8.1 The live line tester will be in compliance with SANS 61243-1 unless where otherwise stated in this specification.
- 8.2 The tester shall operate safely when used in direct contact with live conductors for the voltages between 11 kV and 33 kV.
- 8.3 The live line tester shall be an outdoor type.
- 8.4 The live line tester shall be of the capacitive type with the use of an internal power supply for self test purposes.
- 8.5 The contact electrode shall make physical contact with the equipment under investigation.
- 8.6 Indication shall be of visual nature. The tester shall have a green light indicating de-energised condition and flashing a red light indicating energised condition.
- 8.7 Additional Audible signals may also be used.
- 8.8 The indicators shall be clearly visible when viewed from ground level in bright daylight conditions or be able to store the reading until the equipment is returned to ground.
- 8.9 The tester shall be able to switch off automatic after 2 minutes if no high voltage is detected.
- 8.10 The tester shall have a power on switch. When the tester comes in contact with a live conductor it will automatically switch on.
- 8.11 An internal testing element shall be provided to test the live tester for correct functioning.
- 8.12 The high voltage sensing device shall be safe and waterproof when used in light rain for extended periods.
- 8.13 The tester shall indicate its battery condition or status.
- 8.14 The batteries of the tester shall last more than an hour on continuous operation.
- 8.15 The housing of the internal batteries shall be constructed to prevent leaking batteries damaging the electronic parts or switching components.
- 8.16 The live line tester accuracy shall be insensitive to electromagnetic fields from adjacent live catenaries or conductors.
- 8.17 The live part of the tester will be fully insulated from the user when in use for the insulation levels specified.
- 8.18 It is essential that the live line tester or high voltage sensing device is designed and manufactured for very high reliability and long life with a minimum of maintenance requirements.

8.19 The live line tester shall be safe for use when the Voltage to be detected contains lower order harmonics (below 1 kHz).

9.0 MECHANICAL CONSTRUCTION AND CHARACTERISTIC REQUIREMENTS OF THE EQUIPMENT

9.1 The basic mechanical assembly of the live line tester shall include a contact electrode, indicator and adaptor as illustrated in Fig 1b of SANS 61243-1.

9.2 The supply of an insulating pole, handle, hand guard and limit mark that conforms to SANS 61243-1 is optional.

9.3 If an insulating pole/rod material is supplied it shall be constructed from reinforced fibre glass.

9.4 The insulating pole shall be of such a length that the test electrode can make physical contact with a conductor 7m above the rail level.

9.5 The length of the handle shall be such that it can safely be operated by two hands.

9.6 For the case that the insulating pole, handle, hand guard and limit mark is not supplied the adaptor shall be of such nature that it can fit into a 'Rose' type end fitting.

9.7 The contact electrode shall be of suspension hook type to allow for easy contact with overhead track equipment.

9.8 The size of the suspension hook shall be such that a conductor of maximum diameter of 50 mm can be tested

9.9 The live line tester shall have a maximum weight of 5 kg.

9.10 The equipment shall be of robust design to withstand rough handling.

9.11 An appropriate carry case, capable of sufficiently protecting the live line tester from damage due to vibrations during transport under severe service road conditions, shall be provided.

9.12 The equipment shall withstand shock and vibration.

9.13 The tester construction shall be such that overhaul and maintenance can be easily undertaken.

10.0 TESTS AND CONFORMANCES

10.1 The live line tester shall comply with all tests stated in SANS 61243-1. Test values/parameters shall be according to SANS 61243-1 unless the values differ from the ones stated in this specification.

11.0 MARKINGS

1.1 The equipment shall be clearly marked in accordance to SANS 61243-1. Additional markings:

11.1.1 Voltage range e.g. "11kV to 33kV AC"

11.1.2 "Transnet Approved BBD7225"

11.1.3 Manufacturer's name, symbol and serial number

11.1.4 Date of manufacture

11.2 The functions of all switches and indicators shall be clearly and permanently marked.

11.3 All markings shall be in English.

12.0 SPECIAL TOOLS, SERVICING AIDS MANUALS AND SPARE PART LISTS

12.1 All auxiliary equipment and accessories, which are required for the operation of the equipment in accordance with the requirements of this specification, shall be accounted for in the tendered price.

12.2 Special tools or servicing aids required for the maintenance or repair shall be quoted for separately.

12.3 The tenderer shall supply comprehensive copies of instruction/maintenance manuals with each tester.

12.4 The tenderer shall prescribe the interval for maintenance and calibration.

13.0 GUARANTEE AND DEFECTS

13.1 The tenderer shall guarantee the satisfactory operation of the equipment supplied and accept liability for maker's defects, which may appear in design, materials and workmanship.

13.2 The tenderer shall specify a guarantee period that shall not be less than 12 months and the period shall commence on the date of delivery.

14.0 TRAINING

14.1 The tenderer shall make a separate quotation on training given on how to use the equipment if required.

15.0 TEST CERTIFICATE

15.1 The tenderer shall provide the type tests certificates on the day of delivery of the equipment. All certificates shall have detailed information about the type tests and the test methods used in accordance to SANS 61243-1 and as stipulated in this specification.

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16.0 APPENDIX 1

16.1 SCHEDULE OF REQUIREMENTS (To be filled in by Transnet Freight Rail)

16.1.1 Quantity required:

.....

16.1.2 Depot and Address Required for:

.....
.....
.....
.....
.....

16.1.3 Electrical Characteristics

16.1.3.1 System Voltage (11kV/33kV AC):

16.2 INSULATION ROD

16.2.1 Insulating pole/rod required for transmission (Yes/No):.....

16.2.2 Insulating pole/rod required for switching panel (Yes/No):.....

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17.0 APPENDIX 2

17.1 TECHNICAL DATA SHEET (To be filled in by Tenderer)

17.1.1 Tender information

17.1.1.1 Tenderer

17.1.1.2 Tender no.

17.1.1.3 Date:

17.1.2 General

17.1.2.1 Type (Indoor/Outdoor):

17.1.2.2 Conductor material:.....

17.1.2.3 Insulating material:.....

17.1.2.4 Wet and dry voltage insulation rating:.....

17.1.3 Battery

17.1.3.1 Internal/External Battery?.....

17.1.3.2 Operating battery Voltage (V_o):.....

17.1.3.3 Battery type:.....

17.1.3.4 Expected service life of the battery (hours continuous):.....

17.1.4 Physical appearance

17.1.4.1 Physical dimensions of carry case (mm):.....

17.1.4.2 Does all accessories fit into carry case?:.....

17.1.4.3 Maximum height live line tester can reach with extension (m):.....

17.1.4.4 Mass of live line tester (kg):.....

17.1.4.5 Mechanical lifetime:.....

17.1.5 Electrical

17.1.5.1 Maximum detection Voltage (Volt):.....

17.1.5.2 Minimum detection Voltage (Threshold Voltage) (Volt):.....

17.1.5.3 Leakage current under dry conditions (Ampere):.....

17.1.5.4 Leakage current under wet conditions (Ampere):.....



TRANSNET
freight rail

A division of Transnet limited

TECHNOLOGY MANAGEMENT

SPECIFICATION

LIVE LINE TESTER (HIGH VOLTAGE DETECTOR) TO BE USED ON 3 kV DC OVERHEAD TRACK EQUIPMENT ONLY

Author: Chief Engineering Technician
Section: Technology Management

B.L. Ngobeni

Approved: Senior Engineer
Section: Technology Management

L.O. Borchard

Authorised: Principal Engineer
Section: Technology Management

W.A. Coetzee

Date: 24 November 2010

Circulation restricted to: Transnet Freight Rail
Technology Management

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1.0 SCOPE

This specification covers Transnet Freight Rail's requirements for a live line tester for use on 3 kV DC overhead track equipment.

2.0 STANDARDS AND PUBLICATIONS

2.1 Unless otherwise specified all materials and equipment supplied shall comply with latest edition of the SANS publications

2.2 The following publication is referred to in this specification:

2.2.1 South African National Standard

SANS 61243-2 - Live working – Voltage detectors: Part 2: Resistive type to be used for voltages of 1 kV to 36 kV AC.

3.0 DEFINITIONS

3.1 The live line tester or high voltage-sensing device will be referred to herein as the tester.

4.0 TENDERING PROCEDURE

4.1 Tenderers shall indicate clause-by-clause compliance with the specification. This shall take the form of a separate document listing all the specifications clause numbers indicating the individual statement of compliance or non-compliance.

4.2 A statement of non-compliance shall be motivated by the tenderer.

4.3 Tenderers shall submit descriptive literature consisting of detailed technical specifications, general constructional details and principal dimensions, together with clear illustrations of the equipment offered.

4.4 Failure to comply with clauses 4.1, 4.2 and 4.3 could preclude a tender from consideration.

5.0 SERVICE CONDITIONS

5.1 The live line tester shall be designed to operate under the following environmental conditions:

Altitude	:	0 to 1800 metres above sea level.
Relative humidity	:	10 % to 90 %.
Ambient temperature range	:	Minus 10°C to plus 55°C.
Lightning density	:	12 ground flashes per square kilometre per annum.
Air pollution	:	Heavily salt laden or polluted with smoke from industrial sources.

5.2 The equipment shall be of robust design to withstand rough handling, shock and vibration when transported in its case over extremely rough roads.

6.0 ELECTRICAL REQUIREMENTS

6.1 The tester shall detect a live line energised at a voltage between 2.3 kV and 3.9 kV DC and be safe when in direct contact with the live conductor.

- 6.2 The insulation level of all the live parts of the tester shall be designed for a safety factor of not less than 2.5 and the live parts of the tester shall be marked with warning signs.
- 6.3 The tester shall not cause a flash over or breakdown between live parts of an installation or between a live part of an installation and earth.
- 6.4 The tester shall have a pick-up voltage of 1.10 kV DC ($\pm 5\%$).
- 6.5 The tester shall be constructed such that the indicator cannot be damaged or shut off as a result of a spark discharge in accordance to SANS 61243-2 clause 4.3.3.
- 6.6 The maximum circuit current through the tester when the rated voltage is applied to the contact electrode shall not exceed 3 mA ($\pm 5\%$).
- 6.7 In accordance to SANS 61243-2 clause 4.2.1.4 the tester shall not be affected in the presence of adjacent live or earthed systems. The presence of interference field shall not affect the indication when used in accordance with instructions for use.

7.0 GENERAL REQUIREMENTS

- 7.1 In accordance to SANS 61243-2 clause 4.1.1 the tester shall be designed and manufactured to be safe for the user, provided it is used in accordance with safe methods of work and operating instructions for use.
- 7.2 The tester shall have a green light indicating de-energised (voltage not present) and a red light indicating energised (voltage present) conditions respectively.
- 7.3 The tester shall give a continuous indication when in direct contact with a live part.
- 7.4 The indicators of the tester shall be clearly visible from ground level in bright daylight conditions and also be in accordance with SANS 61243-2 clause 4.2.2.1.
- 7.5 A tester with a built-in power source shall give a clear indication until the source is exhausted unless its usage is limited by an indication of non readiness or automatic shut-off as mentioned in the operating instructions.
- 7.6 The tester shall have a testing element that will indicate (check) whether the tester is ready or not ready for use in accordance to SANS 61243-2 clause 4.2.7.
- 7.7 The tester shall be safe and waterproof when used in light rain for extended periods.
- 7.8 The tester shall be designed for very high reliability and long life with minimum maintenance requirements.
- 7.9 The tester shall be able to reach a conductor height of 5.5 m above rail level.
- 7.10 The tester shall be able to be used on a 170 mm² thick conductor.
- 7.11 The tester connecting leads shall be of highly flexible copper with plastic insulation.
- 7.12 The tester shall switch itself off after 2 minutes if no voltage is detected.
- 7.13 The housing for the batteries of the tester shall be constructed to prevent leaking batteries damaging the electronic parts or switching mechanisms.
- 7.14 The tester shall be fully insulated and a suspension hook shall be provided on the end of the test probe.
- 7.15 The tester shall be provided with a suitable portable carrying case. Where a separate operating stick is provided, it shall also be supplied in a portable carrying case.

7.16 The mass of the tester shall be such that it can be handled and operated easily by one person (male or female).

7.17 In the event that a rail connection is offered, tenderers shall ensure that the rail connection can be safely made when the tester is in contact with a live conductor.

8.0 MECHANICAL REQUIREMENTS

8.1 The tester should be vibration resistant in accordance to SANS 61243-2 clause 4.4.4.

8.2 The tester should be drop and shock resistant.

9.0 TESTS

9.1 Checking of the testing element shall be done in accordance with SANS 61243-2 clause 5.2.8.

9.2 The drop resistance test shall be in accordance with SANS 61243-2 clause 5.4.6.

10.0 OPERATING INSTRUCTIONS AND MANUALS

10.1 Each tester has to be accompanied by the manufacturer's operating instructions and manual.

11.0 ADDITIONAL INFORMATION

Tenderers shall provide the following information at the tendering stage:

11.1 The battery requirements of the tester and the expected service life of the batteries at 20 operations per day.

11.2 The maximum safe working range (voltage) of the tester.

11.3 Spare components recommended and availability for local repair.

11.4 The mass of the tester.

11.5 Experience in the durability of the tester during normal daily use, including weatherability and sustained insulation values.

11.6 The dimensions of the carrying case provided with the tester.

12.0 MARKINGS

12.1 The equipment shall be clearly marked in accordance to SANS 61243-2. Additional markings:

12.1.1 System operating voltage: - e.g. 3 kV DC only.

12.1.2 Manufacturer's name, symbol and serial number.

12.1.3 Date of manufacture

12.1.4 Transnet Approved BBC2076

12.2 The functions of all switches shall be clearly and permanently marked in English.

13.0 GUARANTEE

13.1 The tenderer shall guarantee the testers for a period of 12 months and the period shall commence on the date of delivery.

14.0 CHANGE

This specification was changed under cover of Engineering Change Proposal (ECP) BBD6962.

END

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