

INFRASTRUCTURE ENGINEERING

PROCUREMENT SPECIFICATION

Provision For Supply of Tool Box Equipment For Electrical Maintenance Team

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Transnet Freight Rail –Rail network
Approved third parties

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1. Scope

- 1.1 This specification outlines the requirements of equipment for Transnet Freight Rail (Electrical departments) as listed under annexure A, titled “List of Tools required” of this document.
- 1.2 The equipment required shall be delivered to the depot as will be stipulated on the contract for this procurement event.
- 1.3 Tenderers are requested to read this specification and related documents as highlighted in the specification. Tenderers shall complete a schedule of compliance attached to this specification.
- 1.4 Tenderers are to submit the complete specification for products on offer at the tendering stage.

2. Environmental Conditions

- 2.1 The equipment as per list of tools required annexure will be used in all weather conditions having altitudes varying from sea level to 1850m above sea level, relative humidity 0% to 90% and atmospheric conditions which vary from heavily saline to dry and dusty.
- 2.2 Ambient air temperatures ranging from -5° C to 50° C.

3. Qualifications

- 3.1 The design of the components as per list of tools required is to be that of the manufacturer, but must be of robust construction in order to meet sustained operational duty demands, yet they must be light and easy for each to be used safely.
- 3.2 The tools and components will be acceptable in standard factory production finish and colour. Details to be furnished.

4. Performance

- 4.1 The actual design of all components or tools as per list of tools required shall have the capacities as stated in this specification.
- 4.2 The components or tools are to be easily and economically maintained/repaired with standard workshop tools and equipment when necessary.

5. Technical Requirements

5.1 General Description

- 5.1.1 Transnet Freight Rail requires heavy duty, professional tools and equipment for the Electrical department personnel. These tools and equipment shall be complete sets of quantities as per the list of tools required attached as annexure A to this specification.
- 5.1.2 The equipment shall conform to the requirements as laid down in this specification and the relevant SANS and international standards.

5.2 Punches and Chisels

- 5.2.1 The punches and chisels are required as per list of tools required.
- 5.2.2 The punches, Tommy bar and chisels required shall be made from Chrome-Vanadium-Molybdenum steel (45CrMoV7).

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- 5.2.3 The drift and center punches required shall conform to the requirements of DIN6458 and DIN 7250 respectively.
- 5.2.4 Chisels shall be supplied with PVC hand guards ergonomically designed for chisels on offer.
- 5.2.5 The chisels and punches shall have their working edge polished and clear vanished.
- 5.2.6 The striking head of both chisels and punches shall be tempered to prevent shattering.
- 5.2.7 The tommy bar required shall be supplied as indicated under list of tools required.

5.3 Hammers

- 5.3.1 The hammer heads shall be of forged quality steel which has a composition of 0.2% to 0.3% chromium. Minimum material composition shall be as specified in the SANS 387:2008.
- 5.3.2 The hammer heads shall be well shaped and free from flaws, seams and other defects.
- 5.3.3 The eye of the head shall lie centrally in the width of the hammer head.
- 5.3.4 The handles shall be as indicated on the schedule of requirements, thus shall comply fully with the requirements as stated in standard “SANS 387:2008 – Hammer heads and hand hammers”.
- 5.3.5 All the hammer heads shall be clearly marked the manufacturer’s name or trade mark and the nominal mass.

5.4 Pliers

- 5.4.1 The combination pliers and side cutters shall be of a C50 grade or equivalent forged quality steel.
- 5.4.2 The pliers shall be hardened and annealed in an environment that provide uniform flow of gases. A minimum hardness of 60HRC is required.
- 5.4.3 The combination/fencing pliers shall have a cutting edge that is extra hardened to ensure good cutting and durability.
- 5.4.4 Pliers shall be of nickel and chrome plated.
- 5.4.5 Handle shall be of a pressed and bonded non-slip surface.
- 5.4.6 The lock grip pliers shall be made from chrome-vanadium steel (31CrV3) and nickel plated.
- 5.4.7 The lock grip pliers shall have a three point shaped jaw and straight wire grooved jaw hardened to minimum 50HRC.

5.5 Screw drivers

- 5.5.1 Screw drivers shall be made from Chrome-Vanadium-Molybdenum steel (45CrMoV7).
- 5.5.2 Screw drivers shall have component handle with a non-slip surface, shock resistant and ergonomically designed for maximum user productivity.
- 5.5.3 All Phillips and flat screw drivers shall comply with DIN5262 and DIN5265 respectively.

5.6 Spanners

- 5.6.1 All spanners (including shifting spanners) shall be made from Chrome-Vanadium steel (31CrV3).
- 5.6.2 All spanners shall be manufactured through a forging process and hardened in a protected environment in which all oxygen is removed to avoid oxidation.
- 5.6.3 The spanners must be heat treated and tempered to the correct hardness.

5.7 Sockets and Wrenches

- 5.7.1 All sockets and torque wrenches shall be made from Chrome-Vanadium steel (31CrV3).
- 5.7.2 All sockets shall be manufactured through a hot forging process and hardened in a protected and controlled environment.
- 5.7.3 The sockets shall be supplied with the suitable reversible ratchet driving wrench. The ratchet shall comply with “SANS 1113 – Hand-operated, square-drive socket wrenches”.
- 5.7.4 All socket shall have a minimum hardness of 39HRC.

5.8 Miscellaneous equipment

- 5.8.1 See tool list attached as annexure A

Testing equipment

- 5.9.1 Test and measurement equipment required shall be as indicated in the schedule of requirements.
- 5.9.2 Insulation test meter required shall comply to the requirements as laid on the specification attached as annexure A to this specification.
- 5.9.3 Digital multimeter required shall comply to the requirements as laid on the specification attached as annexure A to this specification.
- 5.9.4 A 10m measure tape shall be of steel or nylon with an automatic rewind and locking type.

6. Safety regulated equipment

- 6.1.1 The equipment required under section “Safety tools” in the “schedule of requirements” shall be VDE approved and suitably insulated for 1000V.
- 6.1.2 The VDE insulated tools shall be ergonomically designed for user comfortability and safety.
- 6.1.3 The tools shall be supplied as described in the schedule of requirements.
- 6.1.4 All VDE tools shall conform to “SANS 60900 – Live working: Hand tools for use up to 1000 V AC and 1500 V DC”.

7. Quality Control

- 7.1 All equipment as required by various clauses of this specification must be manufactured in an environment that complies to the latest SANS ISO 9001 to ISO 9004 or similar quality control standards. Details must be furnished.

8. Legal and Operational

- 8.1 All equipment to comply with the requirements of the related SANS, Safety and Environmental standards in force at the time of tendering.
- 8.2 The information as requested by the various clauses in this specification is to be supplied in form of technical data, pamphlets and/or drawings. If this is not complied with, offers may be overlooked.
- 8.3 All equipment is to be guaranteed for a minimum period of 24 months against faulty material and poor workmanship - fair wear and tear excluded. Full details of guarantee are to be submitted.

Annexure A : List of Tools Required

Tools Description			
Punches	Type	Size	QTY
Centre punch 150 mm	Centre	Nom depth of centre - 5mm, length - 150mm	1
Punch drift6,3mm (channel pins)	Drift	Nom depth of centre - 3mm, length - 150mm	1
Hand tools	Type	Size	
Chisel	Flat	Nom width of cut - 25mm, length - 200mm	1
Chisel	Cross cut	Nom width of cut - 12mm, length - 200mm	1
Tommy bar	Flat	Nom width of cut - 25mm, length - 450mm	1
Bolt Cutter		600mm record	
Allen key set		1,5mm to 12mm Fuhrman	
Hammers	Type	Size	
Hammer ballpeen (wood)- 1kg	Ball peen	0,9 kg - wooden handle	1
Hammer (rubber handle)- 2kg	Double face - mining type with bright finish on the striking surface	1,8 kg - steel-reinforce rubber handle	1
Pliers and grips	Type	Size	
Pliers - Fencing 300mm	Combination	length - 300mm	1
Pliers - Lock grip	Double jaws grip, 3 point shaped bottom jaw and upper jaw with wire groove	length - 230mm	1
Pliers - diagonal cutter 150mm	Diagonal cutter 150mm	length 150mm	
Pliers - diagonal cutter 200mm	Diagonal cutter 200mm	length 200mm	
Wire stripper single grip			
Electrical plier 200mm 1000V insulated		200mm, 1000V Insulated	
SPANNERS - high strength	Type	Size	

Ring-flat spanner - size 10	Ring-flat spanner	Size 10	1
Ring-flat spanner - size 11	Ring-flat spanner	Size 11	1
Ring-flat spanner - size 12	Ring-flat spanner	Size 12	1
Ring-flat spanner - size 13	Ring-flat spanner	Size 13	1
Ring-flat spanner - size 14	Ring-flat spanner	Size 14	1
Ring-flat spanner - size 15	Ring-flat spanner	Size 15	1
Ring-flat spanner - size 17	Ring-flat spanner	Size 17	2
Ring-flat spanner - size 19	Ring-flat spanner	Size 19	2
Ring-flat spanner - size 20	Ring-flat spanner	Size 20	1
Ring-flat spanner - size 24	Ring-flat spanner	Size 24	2
Ring-flat spanner - size 30	Ring-flat spanner	Size 30	2
Ring-flat spanner - size 32	Ring-flat spanner	Size 32	2
Ring-flat spanner - size 36	Ring-flat spanner	Size 36	2
SHIFTING SPANNERS	Type	Size	
Shifting spanners	Adjustable wrench	150mm - as per SANS 1211	1
Shifting spanners	Adjustable wrench	300mm - as per SANS 1211	1
Shifting spanners	Adjustable wrench	450mm - as per SANS 1211	1
SOCKETS & WRENCHES	Type	Size	

Chrome vanadium sockets	Conformance to SANS 1113	8mm to 32 mm	1
Chrome vanadium reversible ratchet wrenches	Conformance to SANS 1113	Square drive, length - 450 mm	1
Measurements & detection	Type	Size	
Measuring tape - 10m	Nylon with automatic rewind and lock	length - 10m	1
Steel rule - 300mm	Steel with standard graduations	length - 300mm	1
Micrometer	External	0 – 50 mm	1
Screw drivers	Type	Size	
Screw driver 3mm x 120mm	mechanic flat	Flat point width - 3mm, length - 120mm	1
Screw driver 4mm x 150mm	mechanic flat	Flat point width - 4mm, length - 150mm	1
Screw driver 4mm x 200mm	mechanic flat	Flat point width - 4mm, length - 200mm	1
Screw driver 10mm x 300mm	mechanic flat	Flat point width - 10mm, length - 300mm	1
Screw driver Philips 120mm	Philips	Star point, length - 120mm	1
Screw driver Philips 150mm	Philips	Star point, length - 150mm	1
Screw driver Philips 200mm	Philips	Star point, length - 200mm	1
High Voltage Screw drivers (1000V Flaunt)	1000V Flaunt	1000V Flaunt	1
High Voltage Screw drivers (1000V Round)	1000V Round	1000 V round	1
Long nose Plier insulated		200mm, 1000V	1
Miscellaneous	Type	Size	
Steel toolboxes - with trays	Five compartment, step folded and lockable. Powder coated to prevent corrosion.	450 X 248 X 220	1
Hacksaw frame - 300mm	Steel cut	300mm blade size	1

Extension lead - 25m electrical	Electrical (single phase) - 220V rated voltage on reel with earth wire	length - 25m	1
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SAFETY			
Pliers - insulated long nose 150mm	Insulated long nose, conformance to SANS 60900	length - 150mm	1
Pliers - insulated round nose 150mm	Insulated round nose, conformance to SANS 60900	length - 150mm	1
Pliers - insulated side cutter 150mm	Insulated side cutter, conformance to SANS 60900	length - 150mm	1
Cable knife			1