



BILL OF QUANTITY AND PROJECT SPECIFICATION

OHTE MATERIAL AND TOOLS FOR GP

Godfrey Maluleke
Manager Electrical (OHTE)

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1. INTRODUCTION

The purpose of this project is to provide a service of supply and deliver of OHTE material and tools.

2. DESCRIPTION OF WORKS/SCOPE OF WORKS

Supply and delivery of material and tools to the PRASA Gauteng region Electrical Depot.

2.1. Gauteng

- 2.1.1. 1500m x 95mm² XLPE cable, 11kV 3core cable
- 2.1.2. 8 x Contact wire micrometer
- 2.1.3. 4 x 10-Ton slash hammers
- 2.1.4. 30 x Shackles (Bow and Dee Types)
- 2.1.5. 4 x Chain slings
- 2.1.6. 8 x Web Nylon slings

3. DURATION

The project contract will be for 1 Month from the date of award. i.e., Tenderer having acknowledged the receipt of the award letter.

4. GUARANTEE

- 4.1. Prasa shall be formally invited to conduct tests and visually inspect the equipment before delivery.
- 4.2. The material/equipment shall be subjected to a guarantee period of 24 months. The guarantee period shall commence the day it is formally handed over to and accepted by PRASA.
- 4.3. Any defects that may become apparent during the guarantee period shall be rectified to the satisfaction of PRASA at no cost to PRASA.
- 4.4. Should the contractor fail to comply with the above, Prasa is entitled to take effective replacement of the defective material. The contractor must reimburse Prasa the total cost for the replacement of materials.



5. TENDERING PROCEDURE (EVALUATION)

5.1. For all quoted items, bidders must submit descriptive literature consisting of a detailed technical description of the product offered, general constructional details, and principal dimensions, together with clear illustrations of each equipment offered. Tenderers shall provide the following additional information at the tendering stage:

- The battery requirements of the tool and the expected service life of the batteries at 20 operations per day.
- Spare components recommended and availability for local repair.
- The mass of the tool.
- Experience in the durability of the tool during normal daily use, including weather ability and sustained insulation values.

5.2. The Bidders must submit a letter from the OEM - Original Equipment Manufacturer /OEM agent authorising the bidder to supply the equipment to PRASA.

5.3. All equipment offered must come with a guarantee of 24 months, and the guarantee policy shall be submitted at the closing of the RFQ.

5.4. Bidders must provide evidence of completed Supply and delivery contract of Electrical tools/materials in the past 3 years. The submission must include a brief description of the electrical tools, client name, client contact details, delivery timelines, and Purchase Order or Contract.

6. PENALTY

Should the Contractor fail to complete delivery on/before the stipulated completion dates, a penalty fee of R5000 per week will be charged.

7. TECHNICAL REQUIREMENTS

7.1. 1500m x 95mm² XLPE cable, 11kV 3core cable

7.1.1. The cable shall be 1500m, 3-core, 95 mm², 11 kV XLPE-insulated power cable fully compliant with IEC 60502-2.



- 7.1.2. The cable shall be supplied in drums of 500m each.
- 7.1.3. The cable conductor shall be Class 2 stranded copper, meeting the dimensional and resistance limits of IEC 60228.
- 7.1.4. The insulation shall be XLPE, triple-extruded, free of contaminants, and must withstand a continuous operating temperature of 90 °C.
- 7.1.5. The insulation and conductor screens shall be extruded semi-conducting layers in accordance with IEC 60502-2 requirements.
- 7.1.6. The metallic screen shall provide adequate earth-fault current carrying capacity for the specified network conditions.
- 7.1.7. The cable armour shall be galvanized steel wire armour (SWA) suitable for mechanical protection under direct burial and duct installation conditions.
- 7.1.8. The outer sheath shall be UV-resistant black PVC or LSZH, marked with manufacturer details, year of manufacture, cable size, voltage rating, and metre markings.
- 7.1.9. The bidder shall provide complete dimensional data, including overall diameter, weight per metre, and minimum bending radius.
- 7.1.10. The bidder shall provide current carrying capacity values for installation in air, in ducts, and buried conditions as per IEC 60287.
- 7.1.11. Cables shall be delivered on heavy-duty wooden drums with sealed cable ends and labelled with drum number, length, and cable type.

7.2. Contact wire micrometre machine

- 7.2.1. The bidder shall supply a portable, handheld contact wire thickness measuring machine (digital micrometre/gauge) designed for grooved contact wire used in railway electrification (3 kV DC). The instrument shall measure remaining wear thickness at the contact surface without damaging the wire and shall be suitable for field use under railway safety protocols.
- 7.2.2. The machine shall be specifically designed to measure grooved (trolley) contact wire profiles commonly used in traction systems (e.g., 107 mm², 120 mm², 150 mm²; customer will confirm final list).
- 7.2.3. Anvil geometry shall ensure stable seating on the wear face and flanks of grooved wire, preventing slippage or off-axis readings.
- 7.2.4. The machine shall accommodate contact wires measurement at mid-span and near registration points.
- 7.2.5. Measuring range: Minimum 0 – 80 mm (or better) effective thickness.



- Resolution: 0.01 mm or finer.
 - Accuracy (MPE): ± 0.01 mm or better over the entire usable range.
 - Repeatability: ≤ 0.01 mm under identical conditions.
 - Measuring force control: Built-in ratchet/friction thimble or constant-force mechanism (nominal 5–10 N) to avoid deforming the contact surface.
 - Thermal stability: Integrated temperature compensation or correction table; error from 0–40 °C shall not exceed accuracy limits.
- 7.2.6. Frame/Body: Rigid, shock-resistant, corrosion-resistant (anodized aluminium or reinforced polymer)
- 7.2.7. Weight: ≤ 1 kg per unit (including battery) to reduce operator fatigue.
- 7.2.8. Ingress protection: Minimum IP54 (preferred IP65).
- 7.2.9. Display: Backlit digital display readable in daylight and at night; minimum 8 mm digit height.
- 7.2.10. Power: Rechargeable Li-ion battery with ≥ 16 hours typical field runtime at 20 °C; USB-C or approved charger.

7.3. 10-ton slash hammers

- 7.3.1. The bidder shall supply a 10-ton rated heavy-duty industrial slash/sledge hammer designed for extreme impact applications such as track maintenance, steelwork, construction, and heavy mechanical operations
- 7.3.2. The hammer shall deliver an equivalent impact rating of 10-ton force or higher, verified through manufacturer documentation.
- 7.3.3. The hammer head shall be engineered to withstand high-energy repeated blows without cracking, deforming, or chipping.
- 7.3.4. The tool must be suitable for use on hardened steel, mechanical couplings, heavy pins, structural steel, and rail components.
- 7.3.5. Handle shall be made of:
- Fiberglass-reinforced composite (preferred), or
 - Hickory hardwood graded for industrial impact tools.
 - Minimum handle length: 900–1200 mm (bidder to specify exact length).



- Handle shall be oil-resistant, shock-absorbing, and non-slip, suitable for gloved use.
- Handle-to-head joint shall be epoxy-secured or resin-bonded with a mechanical wedge locking system.

7.4. Shackles (Bow and Dee Types)

- 7.4.1. The bidder shall supply Bow (Anchor) Shackles and Dee Shackles for use in lifting, rigging, tensioning, and mechanical applications in accordance with recognized international standards.
- 7.4.2. The bidder shall supply:
- **Bow Shackles (Anchor Shackles)** – suitable for multi-directional loading.
 - **Dee Shackles (D-Shackles)** – suitable for straight-line load applications.
 - Each type must be clearly identified and marked.
- 7.4.3. Shackles shall have a **Working Load Limit (WLL)** of 1 ton to 10 tons).
- 7.4.4. Safety Factor: Minimum 6:1 (proof load = 2× WLL; minimum breaking load = 6× WLL).
- 7.4.5. Shackles shall be suitable for a temperature range of -20 °C to +200 °C without loss of rated capacity.
- 7.4.6. Each shackle shall undergo proof load testing at the factory.
- 7.4.7. Maximum side-loading ratings (for Bow Shackles):
- 50% WLL at 45° angle
 - 25% WLL at 90° angle

7.5. Chain slings

- 7.5.1. The bidder shall supply **graded alloy steel chain slings** (double, three-leg, and four-leg) complete with hooks, connectors, and master links for lifting operations in industrial, construction, engineering, and OHTE environments.
- 7.5.2. All chain slings shall be manufactured from steel alloy suitable for lifting applications.
- 7.5.3. The chain material shall be quenched and tempered alloy steel with high toughness and wear resistance.
- 7.5.4. Chain links shall be welded and calibrated to meet dimensional and load requirements.



- 7.5.5. Components (hooks, master links, couplers) must be from the same grade as the chain.
- 7.5.6. Chains shall be supplied with factory-applied anti-corrosion finish (painted, powder-coated).
- 7.5.7. The Working Load Limit for each sling configuration (1-leg, 2-leg, 3-leg, 4-leg) shall range from 1 ton to 10 ton.

7.6. Web Nylon slings

- 7.6.1. The bidder shall supply synthetic flat webbing slings made of high-tenacity nylon or polyester webbing suitable for lifting, rigging, construction, maintenance, and industrial applications
- 7.6.2. Slings shall be manufactured from high-tenacity Nylon (Polyamide) or Polyester (PES) webbing.
- 7.6.3. Material shall be woven, seamless, non-load-bearing stitching, and resistant to tearing and fraying.
- 7.6.4. Slings must have low elongation characteristics:
 - Polyester: $\leq 3\%$ at WLL
 - Nylon: $\leq 10\%$ at WLL
 - Webbing fibers must be resistant to:
 - UV degradation
 - Oil and grease
 - Mild acids and alkalis
 - Moisture and fungal growth
- 7.6.5. Each sling must have a durable, permanently attached label, showing:
 - Manufacturer name/logo
 - WLL and sling type
 - Serial/traceability number
 - Safety factor (7:1)
 - Length (Effective Working Length)
 - Material (Nylon/Polyester)



- Year of manufacture

7.6.6. The Working Load Limit for each sling configuration (1-leg, 2-leg, 3-leg, 4-leg) shall range from 1 ton to 10 ton.

8. MECHANICAL REQUIREMENTS

8.1. The tools must be vibration resistant in accordance to SANS 61243-2 clause 4.4.4.

8.2. The tools should be drop and shock resistant.

9. OPERATING INSTRUCTIONS AND MANUALS

9.1. Each item must be accompanied by the manufacturer's operating instructions and manual.

10. MARKINGS

10.1. The equipment shall be clearly marked in accordance to SANS 61243-2.

10.2. Additional markings:

- System operating voltage: - e.g. 3 kV DC only
- Manufacturer's name, symbol and serial number.
- Date of manufacture
- The functions of all switches shall be clearly and permanently marked in English.

11. DELIVERY

The Electrical tools shall be delivered at the Rodepoort PRASA Electrical Depot

12. BILL OF QUANTITIES

Tools			
Item	Qty	Rate	Total



95mm ² XLPE cable, 11kV 3core cable	1500m		
Contact wire micrometer machine	8		
10-Ton slash hammers	4		
30 x Shackles (Bow and Dee Types)	30		
Chain slings	4		
Web Nylon slings	8		
24-month guarantee			
		Total (Exc.)	
		VAT (15%)	
		Total	

End