



The Kenya Power & Lighting
Co. Ltd.

TITLE:

**SPECIFICATION FOR
OVERHEAD LINE TOOLS
AND EQUIPMENT**

Doc. No.	KPLC1/3CB/TSP/09/004
Issue No.	1
Revision No.	2
Date of Issue	2010-06-18
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ANNEX A: Guaranteed Technical Particulars (to be filled and signed by the bidder for all clauses and submitted together with copies of manufacturer's catalogues, brochures, drawings, technical data and copies of previous certificates for tender evaluation)

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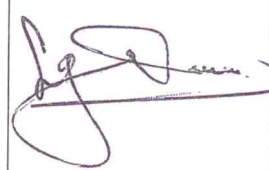
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0.1 Circulation List

COPY NO.	COPY HOLDER
1	Research & Development Manager
2	Procurement Manager
3	Stores & Transport Manager
4	Chief Manager, Distribution
5	Deputy Manager, Technical Audit

0.2 Amendment Record

Rev No.	Date (YYYY-MM-DD)	Description of Change	Prepared by (Name & Signature)	Approved by (Name & Signature)
2	2010-06-18	Included sisal ropes, general editing and removed auger bits which are now covered by separate specification KPLC1/3CB/TSP09/020	S. Kimitei 	G. Owuor 

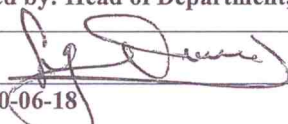
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FOREWORD

This specification has been prepared by the Research and Development Department in collaboration with Distribution Division, both of The Kenya Power and Lighting Company Limited (KPLC) and it lays down requirements for tools and equipment for use on power lines. It is intended for use by KPLC in purchasing the tools and equipment.

It shall be the responsibility of the manufacturer to ensure adequacy of the design and good engineering practice in the manufacture of the tools and equipment for KPLC. The supplier shall also submit information which confirms satisfactory service experience of the manufacturer with products which fall within the scope of this specification.

1. SCOPE

This specification is for tools and equipment for use on power lines.

It is the responsibility of the supplier/bidder to ensure that the offered tools and equipment are of the highest quality and guarantees excellent service to KPLC.

2. REFERENCES

The following standards contain provisions which, through reference in this text constitute provisions of this specification. Unless otherwise stated, the latest editions (including amendments) apply:

EN 353-1: Personal protective equipment against falls from a height. Guided type fall arresters including a rigid anchor line

EN 363: Personal protective equipment against falls from a height. Fall arrest systems

EN 365: Personal protective equipment against falls from a height. General requirements for instructions for use, maintenance, periodic examination, repair, marking and packaging

EN 362: Personal protective equipment against falls from a height. Connectors

EN 1492-2: Textile slings. Safety. Roundslings, made of man-made fibres, for general purpose use

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BS EN 697: Fibre ropes for general service. Polyester (Replaced by: BS EN ISO 1141)

IEC 1010-1: Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements

IEC 61326: Electrical equipment for measurement, control and laboratory use - EMC requirements

ISO 1180: Shanks for pneumatic tools and fitting dimensions of chuck bushings

BS EN 131-1: Ladders. Specification for terms, types, functional sizes

BS EN 131-2: Ladders. Specification for requirements, testing, marking

IEC 60529: Degrees of protection provided by enclosures (IP Code)

3. TERMS AND DEFINITIONS

The definitions given in the reference standards shall apply.

4. REQUIREMENTS

4.1 SERVICE CONDITIONS


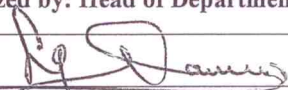
The equipment shall be tropicalized, designed and constructed for continuous outdoor operation in tropical areas and harsh climatic conditions including areas exposed to sea spray (along the coast), humidity of upto 95% and average ambient temperature of +30°C with a minimum of -1°C and a maximum of +40°C.

4.2 PARTICULAR REQUIREMENTS

4.2.1 CONDUCTOR TENSIONER for cables 15 to 19 mm and pulling force of 800 kg

- Universal light alloy wire-strainer, suitable for tightening and pulling cables with diameters ranging from 15 to 19mm, with a pulling force of 800 kg. It should be put at work or disengaged instantaneously.
- The CONDUCTOR TENSIONER shall be equipped with interchangeable self-gripping cams and its anchoring rope. It shall be supplied complete with all relevant accessories & grips, designed according to the same principle as the strainer self gripping jaws, they should easily maintain the tension in the cables while joining and adjusting cable operations. Total weight should not exceed 6.5 kg.
- The conductor tensioner shall be as per Fig 1.

4.2.2 CONDUCTOR TENSIONER for cables 7 to 14mm and pulling force of 600 kg

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- a) Universal light alloy wire-strainer, suitable for tightening and pulling cables with diameters ranging from 7 to 14 mm, with a pulling force of 600 kg. It should be put at work or disengaged instantaneously.
- b) The CONDUCTOR TENSIONER shall be equipped with interchangeable self-gripping cams and its anchoring rope. It shall be supplied complete with all relevant accessories & grips, designed according to the same principle as the strainer self gripping jaws, they should easily maintain the tension in the cables while joining and adjusting cable operations. Total weight should not exceed 5.5 kg.
- c) The conductor tensioner shall be as per Fig 1.

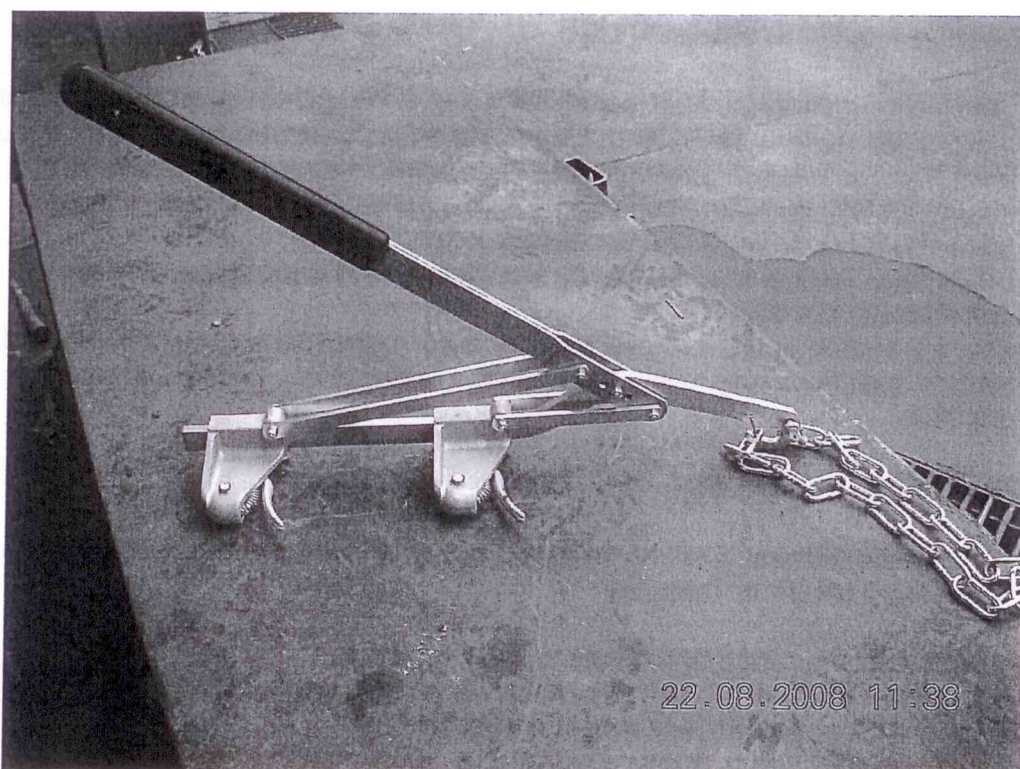


Fig 1: General Arrangement – Conductor Tensioner

4.2.3 ALUMINIUM SUSPENSION LADDER

- a) The ladder shall be suitable for aerial line works and shall be equipped with two interchangeable hanging hooks, made of tubular hot dip galvanized steel, with minimum opening of 220 mm, complete with safety chains and connectors, fitted

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to prevent the ladder becoming detached from the anchoring position. The hooks shall be attached to a light aluminium alloy structure, with tubular rails.

- b) The ladder shall be equipped with integrated anti-fall device (fall arrester), fixed type (not dismountable), sliding along a T guide fixed to one rail of the ladder. The fall arrester shall be complete with an energy absorber, compliant with standard EN353-1.
- c) The ladder shall have corrugated anti-sliding round rungs, made of aluminium, welded to the lateral structure of the ladder, with a distance of 300 mm between two rungs.
- d) The minimum Safe Working Load shall be 300 kg and minimum Breaking Load of 1500 kg. The Length of the ladder shall be 4 m.

4.2.4 SAFETY ANCHORAGE DEVICE

- a) The safety anchorage device shall be suitable for anchoring on round or polygonal poles of diameter upto 320mm. Lanyard shall be complete with energy absorber. The rope shall be made of polyamide fibre material of minimum diameter 16mm and length not less than 2m. It shall be equipped with mobile slide allowing the adjustment according to the anchorage point.
- b) Anchorage Device shall be supplied complete with rectangular Zinc coated steel connector to EN 362.
- c) The connection of the harness with the fall arrester(Safety Anchorage Device) system shall be made using a triangular connector compliant with safety standard EN 362.

4.2.5 FULL BODY HARNESS

The full body harness shall be designed and manufactured to EN 363 and shall have the following minimum features:

- a) Suitable for the range of Medium to X-Large sizes.
- b) Harness shall have two points of anchorage for dorsal and front.
- c) Accessories shall be made of zinc plated steel and fibre straps.
- d) Fixed shoulder straps and size adjustable by means of leg buckles.
- e) Connector for front attachment made of zinc plated steel.
- f) High resistance sewing made of polyamide and nylon loop webbing keeper.
- g) The connection of the harness with the fall arrester(Safety Anchorage Device) system should be made using a triangular connector compliant with safety standard EN 362.

4.2.6 SISAL ROPES

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- a) The sisal rope shall be made from the fibers of the sisal hemp plant.
- b) The rope shall be twisted type formed by coiling three strands together in the same direction. The fibers within each of the three strands must twist in the opposite direction as the strands in order to produce a balanced rope, that is, one which hangs straight and resists kinking.
- c) The twisted rope shall be fused and taped on each end to prevent unraveling.
- d) It shall have excellent resistance to sunlight, little stretch, and good knot-holding ability.
- e) The sisal rope shall be supplied in rolls.
- f) The sisal ropes shall be of the following dimensions, minimum breaking strength, safe working load, weight and roll length:

Rope Diameter		Minimum Breaking Strength	Safe Load (Safety Factor 12)	Minimum Weight	Roll Length
(in)	(mm)	(kN)	(kN)	(kg/m)	(m)
3/8	10	3.85	0.32	0.06	150
1/2	12.5	7.56	0.63	0.10	100
5/8	16	12.5	1.04	0.19	100
3/4	20	15.4	1.28	0.24	100
1	25	25.6	2.14	0.40	100

4.2.7 CONDUCTOR HAND OPERATED HYDRAULIC CUTTER

The conductor hand operated hydraulic cutter shall have the following features:

- a) Designed to cut steel rods, steel ropes & wires, aluminium conductor steel reinforced and copper conductors.
- b) Blades made of high strength special steel, heat treated and of minimum cutting force of 60 kN.

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- c) Maximum operating pressure of 700 bar (70 MPa)
- d) The tool shall be fitted with a two-piston pump that allows quick feed at low pressure and slow feed at high power for the relevant working phase. The tool should also be operated with just one hand at the first low pressure working phase, by using a suitable auxiliary handle.
- e) Area of cutting: 45 mm
- f) Automatic change from low pressure to high pressure operating at 20 bar (2MPa)
- g) The cutting head shall be smoothly turned 360° around the longitudinal axis, in order to better access to tight corners and other difficult working areas.
- h) The tool shall be provided with a maximum pressure valve.
- i) The equipment shall have a safety device that stops feed immediately if the control button is released.
- j) The blades shall be returned to their initial position by turning and closing the pump lever to trigger the return of the piston.
- k) The structure shall be light and compact.
- l) Hydraulic oil approximately 120 ml.

4.2.8 SPIRIT LEVEL CARRYING CASE

- a) The spirit level carrying case shall be made of steel and be suitable for a 24inch spirit level.
- b) It shall light weight and high strength. The inside of the casing to be well cushioned for safety housing of spirit level.

4.2.9 HEAVY DUTY LINESMANS PLIERS 10"

- a) The heavy duty linesman pliers shall be made of high-grade carbon steel and polished non-corroding head. Handles shall have a minimum insulation level of 1000 Volts.
- b) The pliers shall have serrated jaws for gripping nuts, bolts studs and side cutting for wire up to 6mm diameter.
- c) Overall length of the pliers shall be 10" (250mm).

4.2.10 ADJUSTABLE SPANNERS

- a) The adjustable spanners shall be made of high quality chrome vanadium steel.
- b) The spanner shall be in two sizes: length of 250mm (10") and 300mm (12").
- c) The jaws opening shall be 2½" (63mm).

4.2.11 RING SPANNERS

- a) The ring spanners shall be made of high quality chrome vanadium steel.

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- b) The spanners shall be in the following sizes: 30X32mm, 20X22mm and 16X18mm.

4.2.12 OPEN ENDED SPANNER

- a) The open ended spanner shall be made of high quality chrome vanadium steel.
b) The spanner size shall be 1"X7/8".

4.2.13 HEAVY DUTY PIPE WRENCH

- a) The heavy duty pipe wrench shall be made of cast iron frame with drop forged handles and jaws. All moving parts shall be heat treated to prolong tool life.
b) The pipe wrench shall have machined "V" shaped teeth bite.
c) It shall measure 455mm (18") in length and jaws opening upto 60mm. Total weight shall be about 10kgs.

4.2.14 POLE CLIMBERS WOODEN Size 11"

The pole climbers shall comply with KPLC Specification Number.
KPLC1/3CB/TSP/09/001-1.

4.2.15 WHEEL BARROWS HEAVY DUTY

- a) The wheel barrows shall be heavy duty type suitable for carrying concrete mix.
b) The wheel shall have the rotating rod firmly secured to the wheelbarrow body with a roller and bush and not through a bracket. The wheel shall be high quality rubber.
c) The wheel barrows shall be made of high strength steel plates coated with corrosion resistant material. The bucket shall be at least gauge 14. The stands shall be heavy-duty angle iron size 25mmX25mmX6mm thick. The handlebars should be continuous (not welded or jointed with bolts) piping of size 1.5 inches with rubber/plastic grip.

4.2.16 CROW BARS

- a) The crow bar shall be suitable for breaking soft rocky soil (to make holes for poles).
b) It shall be made of high strength steel rod coated with corrosion resistant material and of size 1.25 inch diameter.
c) The crow bar must not be made of twisted bar and shall not be welded. It should be 5.5 feet in length.

4.2.17 HYDRAULIC LIFTING JACKS 60TONS

The hydraulic lifting jacks shall be suitable for jacking of power transformers to a level and shall have the following features:

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- a) The hydraulic pump and jack must be one complete unit and not separate.
- b) It should be of 6 Inch stroke with claw attachment.
- c) Ram capacity shall be 60tonnes.
- d) Claw capacity shall be at-least 24tonnes.
- e) Should have three alternative lever operating positions.
- f) Jack base to claw should be 73mm.
- g) Max effort on lever shall be 52kgs and working pressure of 644bars.
- h) Jack weight not more that 30kgs.

4.2.18 HYDRAULIC REEL STAND WITH DISC BRAKES

- a) Shall be supplied as a pair and shall be able to lift conductor reels of 7 Tons with tubular steel construction. It shall be of hydraulic lifting. The pair of jacks should not exceed 300kg.
- b) The Drum axle shall be made to suit required drum weight and capacity.
- c) Spacers shall be provided to prevent the cable running into the drum jacks.
- d) Drum jacks to be delivered with safe working load certificates.
- e) The drum jacks shall be made so that they are collapsible.
- f) Minimum breaking torque of 400kgm.
- g) Shall have ball-joints for unlevelled ground.

4.2.19 PULL LIFT 1.5TONS

a) Design and construction

- i) The equipment shall be used for lifting, pulling, tensioning and securing loads upto 1.5tons.
- ii) The equipment body and handle shall be made of high-grade aluminium alloy, which shall give it a combination of strength and lightness in addition to being corrosion resistant.
- iii) The chain shall be made of grade 80-alloy steel.
- iv) The working elements shall be of enclosed construction capable of protecting the working elements from dirt and adverse weather (The equipment shall be weather proof).
- v) The hoist shall be capable of withstanding rough handling. It shall not lose any of its properties or functionality due to transportation over rough terrains.
- vi) The hook shall have safety catches and constructed to ISO 2766 grade T.
- vii) The pulling chain shall be at least 7 feet in length. It shall have a safety release latch and up –down-neutral lever.

b) Technical details

ITEM	TECHNICAL DATA
Safe working load	1.5 tonnes
Maximum chain length	1500mm

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Maximum effort on hand chain to lift working load	25 kg
Maximum weight	12 kg
Maximum velocity ratio	110:1
Safety factor	5:1

4.2.20 ARC WELDING MACHINE

The arc welding machine shall be of the following minimum characteristics/features:

- Shall be suitable for use with electrode sizes (mm) 1.5 – 5.0.
- Current range (Amps) 45 – 200.
- Output @ 60% duty cycle (Amps) 142.
- Input voltage 240 – 415V, 50Hz.
- Fuse rating (240V/415V) 25/16A.
- Open circuit voltage – 50V.
- Insulation – class H.
- Protection – IP22.
- Approximate weld thickness range (mild steel) 1.5 – 8mm.

4.2.21 ENDLESS ROUND SLING

- The sling shall be of the endless round design, made from flat webbing fibre woven continuously from high tenacity polyester.
- The sling shall be 'Duplex', made with double thickness webbing.
- The sling shall have a capacity of **5-Tons and 3-Tons** (SWL) and shall be round with approximately 1.5 metres in diameter across
- Slings shall be of **useful lengths of 2-meters**.
- The sling shall be made from oil and acid resisting polyester, which also provides shock resistance and protects loads from damage during lifting.
- The sling shall be light to handle with a high strength to weight ratio.
- The sling shall comply with EN 1492-2, BS EN 697 standards and shall have a minimum 7: 1 factor of safety.
- All slings supplied shall be fitted with a protected label showing a clear unique identification number, the safe working load, date of manufacture, material and size details.
- The slings shall be supplied with safe use instructions.

4.2.22 ALUMINIUM WORK-PLATFORMS FOR TUBULAR OR POLYGONAL POLES

- Shall be able to carry 200kg while mounted on the pole.

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- b) Shall be maximum 13kgs in weight.
- c) Shall be able to secure on poles diameter up to at-least 320mm.
- d) Shall be complete with all relevant accessories for securing on poles including securing chain and lock.

4.2.23 HEAVY DUTY DRILLING MACHINE

- a) Shall be heavy duty and reversible with side handles for holding while drilling.
- b) The chuck shall be able to take high-speed steel twist drill bits of up to 32mm diameter with speeds of upto 330 rpm on no load with power output of 1050W.
- c) Shall have antilock control.
- d) Shall be supplied complete with chuck.

4.2.24 3-PHASE ROTATION TESTER

The phase rotation tester shall have the following minimum features:

- a) The Phase Rotation function identifies phase sequence for 3 phase installations.
- b) The equipment shall be a tough shock resistant voltage measuring tool bag equipment.
- c) The equipment shall be rugged and water resistant for outdoor use and shall be drop proof.
- d) The equipment shall be capable of withstanding rough handling. It shall not lose any of its properties or functionality due to transportation over rough terrains.
- e) Appropriate rated test leads shall be provided. The test leads for phase rotation checking shall be colour coded, with insulated alligator clips.
- f) The manufacturer shall provide detailed disposal procedures.
- g) The equipment shall be carried in a sturdy carrying case.
- h) Automatic shutdown after 5 minutes of non-use.
- i) Low battery state and protective fuse blown indications.
- j) Hold on to peak reading feature.

k) Technical Details

Input power: changeable internally housed batteries

Phase sequence (rotation) indicator (ABC or ACB)

Voltage range a.c: 200mv to 900V (Auto ranging)

Resolution: 0.1 mV

Time limit for continuous use – 5mins at 500V ac

Input impedance > 10 mega ohms

Accuracy at least 0.5%

Safety: to meet IEC 1010-1 standards

EMC to IEC 61326

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Battery life: more than 3000 tests of 5 secs duration.

4.2.25 STEEL TAPE MEASURE 30M

Made length
30metres

Tape width
13mm

weight
Max 1kg.

4.2.26 PICK AXES

- a) Shall be made of high strength steel blades coated with corrosion resistant material.
- b) Shall be fitted with 1.5" hard wood handle. The axe head shall be 8lbs in weight.

4.2.27 JACK HAMMER (PAVEMENT BREAKER) WITH AIRHOSE

The jack hammer shall, as a minimum, have the following features:

- a) Angled air inlet and an in built oil reservoir and well balanced for easy operation.
- b) Smooth external features and high level of thermal insulation.
- c) Recommended air supply pressure of 6bar.
- d) Shank sizes 28mm or 32 hexagon 160mm as per ISO 1180 Standard.
- e) Retainer latch or stirrup.
- f) Valve Plate type.
- g) Lubricator Oil feed into air supply (Integral).
- h) Air inlet male thread G3/4 B(3/4 in BSP).
- i) Noise level at 7 meters (max): muffled -89dB(A)/Unmuffled -94dB(A).
- j) Shall be supplied complete with 19mm X 20 metres long air hose with all coupling accessories.

4.2.28 HOISTING BLOCKS (PULLEYS) SINGLE SHEAVE

- a) Shall be of single sheave with opening frame.
- b) Wide groove steel wide groove sheaves, mounted on ball bearing.
- c) Swivelling hook with safety latch.
- d) Outside diameter 250mm.
- e) Safe working load 5Tons.
- f) Groove width of 28mm.
- g) Approx weight of hoist block: 28kg.

4.2.29 FIBER GLASS EXTENSION LADDERS

The ladder shall be manufactured according to the standard BS EN 131.

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It shall be composed of rails made of fibre glass, open C shaped section with minimum dimensions of mm 72x30. The rungs shall have a rectangular profile with anti-sliding surface, dimensions 20x35 mm. They should be connected to the rails by means of at least 8 rivets (4 on each rail), the fixing plate between rung and rail should be made of aluminium.

Safe Working Load = 150 kg minimum

All elements composing the ladder should be separable and usable stand-alone as simple ladder. All of them equipped with anti-sliding cap on the bottom part.

The base shall have swivelling feet with anti-sliding surface made of suitable plastic. The contact surface should be at least 120x65xH25 mm. The feet shall be reinforced with steel plate included inside the anti-sliding surface.

The ladder shall be equipped with a device allowing the ladder to lean against the pole or move along the pole. This device shall be complete with nylon strap and buckle to secure the ladder connection to the pole. The device shall allow the ladder to run on the pole by means of 2 rollers placed at a V geometry and covered by plastic material.

The ladder shall be equipped with an external adjustable foot, detachable and capable to compensate differences in levels up to at least 20 cm to the ground.

All elements shall be complete with rollers to facilitate the extension of the ladder. The running brackets shall be made of galvanized steel and covered by anti-wear material. Closed length shall be 4.260m
Extended length of 11.0m

The ladder shall be clearly identifiable by means of a metal plate as per clause 6.1.

4.2.30 AUTOMATIC LEVEL

- a) Automatic Level: Instrument complete with tripod stand and leveling stave,
- b) Instrument accessories to include lens cap, plumb bob, vinyl cover, tool kit, operators manual and carrying case.
- c) Technical data:
 - Telescope
 - Objective aperture – 32mm (1.3in)
 - Magnification – 24x
 - Image – Erect
 - Field of view – 1° 25 (2.5m)

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AND EQUIPMENT**

Doc. No.

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Levelling Accuracy

Standard deviation for 1Km double run levelling – 2.0mm (0.08in.)

General

Water resistance – must conform to 1PX4 (IEC60529)

Base screw – diameter 5/8 inch

4.2.31 TOTAL STATION

The Total Station shall be complete with tripod stand and prism complete with rechargeable batteries, quick charger, tubular compass, lens hood, lens cap, plumb bob, tool kit, wiping cloth, vinyl cover, operators manual, carrying case, shoulder strap, laser caution signboard.

Specifications:

Laser class – Class 3R Laser Product

Accuracy (ISO 17123-3)

Measure time – 0.5s or less, continuous

Display resolutions -Fine mode – 0.0001/0.001m

Rapid single / Tracking -Rapid Single: 0.001m /Tracking: 0.01m

Accuracy – Reflectorless range

Operating System – MS-DOS Compatible

Display – Alphaneumeric/graphic dot matrix LCD, with backlight, on both faces

Dust and Water protection – conforms to IP64 (IEC 60529)

Operating temperature – upto 50° C

4.2.32 STEEL WIRE CABLE CUTTER

Shall be designed for effortless fast smooth shearing cuts of armoured steel wire cable (ASW). Shall cut Copper, Aluminium and ACSR conductors of up to 38mm diameter.

The blades shall be made of high strength heat-treated steel.

Shall be able to cut max cross section of 150mm² Steel Wire Armour (SWA).

Shall have a precise ratchet and release mechanism.

Shall have telescopic handles for maximum leverage.

Maximum length of 750mm and maximum weight of 5kg

Shall be supplied in robust case.

4.2.33 MECHANICAL JACK RACK AND PINION 20TON

Shall be of mechanical rack and pinion type.

Gears.pinions and rack shall be made of heat treated steel.

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Lifting head capacity shall be 20tonnes and Side Toe shall be 14Tons.
The closed height shall be 960mm and working stroke of 300mm.. The lifting height shall have toe of minimum 150mm and base size minimum 240x270mm.
Shall have a serrated heat-treated saddle for secure grip.
The construction shall be of heavy duty welded steel construction. Weight shall be 90kg max.
Capacity markings and warning labels should be clearly visible.

5. TESTS AND INSPECTION

- 5.1 The tools and equipment shall be inspected and tested in accordance with the relevant regulatory and industry/reference standard requirements. It shall be the responsibility of the manufacturer to perform or to have performed all relevant inspections and tests.
- 5.2 Copies of previous certificates/test reports by the relevant International or National Testing/Standards Authority of the country of manufacture (or ISO/IEC 17025 accredited independent laboratory) shall be submitted with the offer for evaluation (all in English Language).
- 5.3 Routine/sample test reports for the tools and equipment to be supplied shall be submitted to KPLC for approval before shipment/delivery of the goods.
- 5.4 On receipt of the tools and equipment KPLC will inspect and may perform or have performed any of the relevant tests in order to verify compliance with the specification. The manufacturer shall replace without charge to KPLC, tools and equipment which upon examination, test or use fail to meet any of the requirements in the specification.

6. MARKING AND LABELLING

- 6.1 Each ladder should be clearly identifiable by means of a corrosion resistant metal plate showing the following data:
 - Name of manufacturer
 - Year of manufacturing
 - Serial Number
 - Height in cm
 - Safe Working Load
 - Operation slope
 - Number of elements belonging to the ladder
 - The letters "KPLC"

- 6.2 Each Belt shall be marked in compliance with EN 365, including the following data:

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- Name of the manufacturer
- Type reference
- Date of manufacture
- Production batch
- Serial number
- The letters "KPLC"

6.3 Each Sling shall be marked in accordance with EN 365, including the following data:

- Name of the manufacturer
- Type reference
- Date of manufacture
- Production batch
- Serial number
- The letters "KPLC"

6.4 The work platform shall be clearly identifiable by means of a corrosion resistant metal plate showing the following data:

- Name of manufacturer
- Year of manufacturing
- Serial Number
- Height in cm
- Safe Working Load
- Operation slope
- The letters "KPLC"

6.5 Every tool and equipment shall be marked (in a permanent manner) with the following minimum information:

- Name of the manufacturer
- Type reference
- Production batch
- Serial number
- The letters "KPLC"

6.6 All markings shall be indelible, legible and permanent.

7. DOCUMENTATION

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All the relevant documentation including technical manuals and instructions shall be submitted to KPLC during delivery of the tools and equipment. All documents shall be in English language.

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ANNEX A: Guaranteed Technical Particulars (to be filled and signed by the bidder for all clauses and submitted together with copies of manufacturer's catalogues, brochures, drawings, technical data and copies of previous certificates for tender evaluation)

Tender No.....


Item Description.....

Description	Bidder's offer
Manufacturer & Country	
Name of product and Model Number	
Technical Data for item offered	
Manufacturer's Guarantee and Warranty	
List catalogues, brochures, technical data, drawings, copies of previous certificates and customer sales records submitted to support the offer	
Statement of compliance to specification	

Note: This schedule does not in any way substitute for detailed information required elsewhere in the specification.

.....
Manufacturer's Name, Signature, Stamp and Date

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