



The Kenya Power & Lighting
Co. Ltd.

TITLE:

**SPECIFICATION FOR SAFETY
SIGNS & ACCESSORIES (for
use in workplaces & public
areas)**

Doc. No. KPLC1/3CB/TSP09/022

Issue No. 1

Revision
No. 0

Date of
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0.1 Circulation List

| COPY NO. | COPY HOLDER |
|----------|---|
| 1 | Research & Development Manager |
| 2 | Procurement Manager |
| 3 | Stores & Stock Control Manager |
| 4 | Chief Manager Distribution |
| 5 | Deputy Manager Technical Audit |
| 6 | Deputy Manager Safety, Health & Environment |

0.2 Amendment Record

| Rev No. | Date (YYYY-MM-DD) | Description of Change | Prepared by (Name & Signature) | Approved by (Name & Signature) |
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FOREWORD

This specification has been prepared by the Research and Development Department in collaboration with O&M Department both of The Kenya Power and Lighting Company Limited (KPLC) and it lays down requirements for Safety Signs & Accessories. It is intended for use by KPLC in purchasing the items.

It is the responsibility of the Supplier to ensure that the offered Safety Signs & Accessories are of the highest quality and guarantees excellent service to KPLC. The supplier shall submit information which confirms satisfactory service experience with products which fall within the scope of this specification.

1. SCOPE

This specification is for Safety Signs & Accessories to be used by KPLC staff (teams) working on power lines.

The specification covers the following items to be used in workplaces and public areas:

- a) Traffic Cones
- b) Barricade Tapes and Tape Dispenser
- c) Safety Tags
- d) Warning Tags
- e) Lockouts
- f) Labelled Safety Lockout Hasps
- g) Flexible Steel Wire Cable

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:

- ISO 3864-1 Graphical symbols -- Safety colours and safety signs -- Part 1: Design principles for safety signs in workplaces and public areas.
- ISO 17398 Safety colours and safety signs -- Classification, performance and durability of safety signs.
- ISO 7010 Graphical symbols -- Safety colours and safety signs -- Safety signs used in workplaces and public areas.

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ISO 3864 Graphical symbols -- Safety colours and safety signs -- Part 3: Design principles for graphical symbols for use in safety signs

3. TERMS AND DEFINITIONS

For the purpose of this specification the terms and definitions given in the reference standards shall apply.

4. REQUIREMENTS

4.1 General Requirements

4.1.1 The safety signs and accessories shall be designed and manufactured to ISO standards including the relevant requirements of ISO 3864-1, ISO 17398, ISO 7010, ISO 3864 and the requirements of this specification.

4.1.2 The safety signs and accessories shall be suitable for use outdoors in tropical conditions, average ambient temperatures of +30°C with a minimum of -1°C and a maximum of +40°C, heavy saline conditions along the coast and humidity of up to 95%.

4.1.3 The safety signs and accessories shall be suitable for use by teams working along power lines.

4.1.4 The safety signs and accessories shall not fade nor deteriorate when used in tropical conditions. All required markings shall be legible, permanent type and reflective.

4.1.5 Brand names or catalogue numbers shown on diagrams in this specification are intended to be descriptive only and not restrictive. The Tenderer may adopt higher standards, brand names, and or catalogue numbers in its Tender, provided that it demonstrates to KPLC's satisfaction that the offered items meet the performance requirements.

4.2 Particular Requirements

4.2.1 Traffic Cones

- a) The cones shall be suitable for use along roads to mark areas of work and guide traffic. They shall be compatible with other road safety devices.
- b) The cones shall be weather resistant and remain same in all conditions.
- c) The cones shall be made of uv stabilized non fading materials with high visibility and high reflectivity during day & night.

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- d) The cones shall be complete with in-built heavy rubber base at the bottom of the cone which enables it to bear heavy wind pressures.
- e) The cones shall be in accordance with the Fig. 1 and base diameter of about 350mm with height of 600mm:

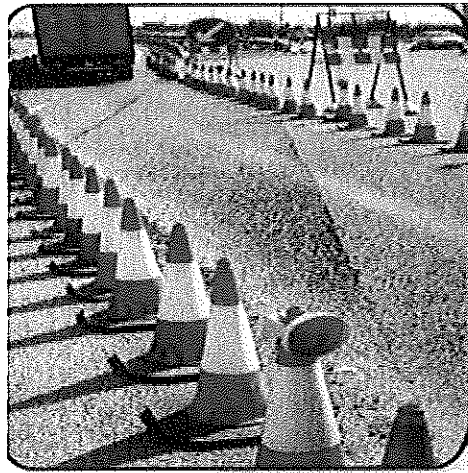


Fig. 1: Traffic Cones

4.2.2 Barricade Tapes

- a) The barricade tapes shall be used mark working area and provide fast on-the-spot warning of potential danger.
- b) The tape shall be non-adhesive type only requiring tying or stapling or nailing to posts or other surfaces.
- c) The tapes shall be made from polyethylene material.
- d) The tape shall be of thickness 0.075mm, width of 75mm and supplied in rolls of 250m.
- e) The tapes shall be of two types:

Type 1: Red color with inscription 'DANGER' marked in black throughout the length of the tape:



Fig 2A: Barricade Tape, Type 1

The marking on the tape shall also include 'electrical' signage (shown below) throughout the length of tape:

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Type 2: Yellow colour with inscription 'CAUTION CONSTRUCTION AREA' & caution sign all marked in black throughout the length of the tape:

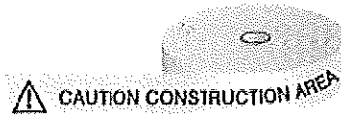


Fig 2B: Barricade Tape, Type 2

4.2.3 Tape Dispenser

- The tape dispenser shall be suitable for quick, safe and efficient dispensing of barricade tape of 75mm width and length of upto 300m. Advancing of the tape shall be by use of thumb.
- The dispenser shall be lightweight and of indestructible polypropylene construction.
- The dispenser shall be complete with in built steel safety cutting blade.
- The dispenser shall be of the type shown in Fig. 3:

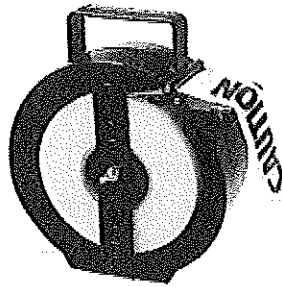


Fig. 3: Tape Dispenser

4.2.4 Safety Tags

- The safety tags shall provide on-the-spot identification of safety measures.
- The tags shall have ties attached suitable for attachment to any part of equipment.
- The tags shall be printed on both sides ensuring that vital information is always visible.
- The tags shall be made of PVC of 0.2mm thickness and size 75 x 160mm.
- The tags shall be supplied in packets of 10 tags per packet.
- The tags shall be of two types:

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Type 1: 'Caution, men working on this equipment' inscription in black letters with caution sign on white background as per figure below:



Fig.4A: 'Caution, men working on this equipment' tag

Type 2: 'Do not switch on under maintenance' inscription in white letters on red background with prohibition sign in red on white background as per figure below:

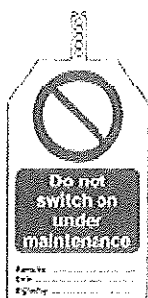


Fig 4B: 'Do not switch on under maintenance' tag

4.2.5 Warning Tags

- a) The warning tags shall provide on-the-spot identification of safety measures.
- b) The tags shall be the type that is used by those responsible for placing a lockout device and are authorized to remove it or make changes to it. It shall have provision for indicating the authorized person as indicated in the figures 5A –C.
- c) The tags shall be printed on both sides ensuring that vital information is always visible.
- d) The tags shall be manufactured from flexible polyester, resistant to water, oil and extreme temperatures.
- e) The tags shall be of matt surface finish allowing one to write on them easily with a ball point pen or felt-tip pen.
- f) The tags shall be supplied in packets of 10 tags with 10 cable-ties per packet.
- g) The tags shall be in sizes of 75 x 160mm.
- h) The tags shall be of three types:

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Type 1: 'Do not switch on, under maintenance' inscription in white letters on red background with prohibition sign in red on white background as per figure 5A:



Fig.5A: 'Do not switch on, under maintenance' tag

Type 2: 'Do not operate, men at work' inscription in white letters on red background with prohibition sign in red on white background as per figure 5B:

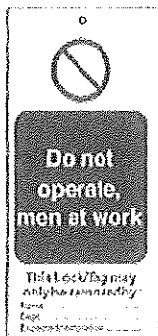


Fig 5B: 'Do not operate, men at work' tag

Type 3: 'Do not operate' inscription in white letters on red background with prohibition sign in red on white background as per figure 5C:



Fig 5C: 'Do not operate' tag

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4.2.6 Lockout

- a) The lockout shall be suitable for use on fuse or switch boxes.
- b) The lockout shall be of sturdy steel with hasp of 25.4mm and shall accept six padlocks each of maximum shackle diameter of 10mm and have minimum shackle clearance of 20mm.
- c) The lockout shall be packaged as one piece.
- d) The lockout shall be as per figure 6.

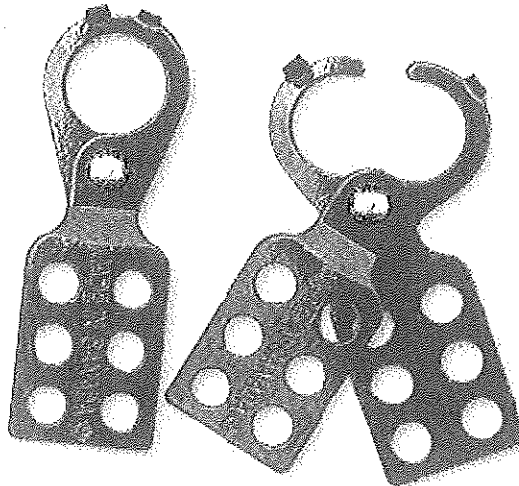


Fig 6: Lockout

4.2.7 Labelled Safety Lockout Hasps

- a) The labelled safety lockout hasp shall be a combination of lockout and tagout (detailed above)
- b) The lockout shall be of tough anodized aluminium.
- c) It shall allow a single employee to lock out and service equipment. It shall also allow up to five additional employees to apply their locks and tags.
- d) It shall allow writing by use of pens, pencils and permanent markers. Prints from pens and pencils shall be erasable.
- e) The lockout shall be of size 184 x 76 x 4.7mm.
- f) Maximum shackle diameter shall be 8mm and the minimum shackle clearance of 20mm.
- g) The labelled safety lockout hasp shall be as per figure 7.

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Fig 7: Labelled Safety Lockout Hasp

4.2.8 Flexible Steel Wire Cable

- a) The flexible wire cable shall have PVC coating for use with a padlock.
- b) It shall be 8mm in diameter and 250cm in length.
- c) It shall be supplied packaged as one piece.
- h) It shall be as per figure 8.



Fig 8: Flexible Steel Wire Cable

4.2.9 Free Standing Safety Signs

- a) The free standing safety signs shall be suitable for temporary marking of workplaces, outdoors.

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- b) It shall have inscriptions 'DANGER', electrical graphic and 'HIGH VOLTAGE' marked on both sides as shown in Fig. 9.
- c) It shall be supplied packaged as one piece.
- d) It shall be as per Fig 9 and of size 310mm width and 620mm height (approx).



Fig 9: Free Standing Safety Sign

4.2.10 Men at Work Signage

- a) The Men at Work safety signs shall be suitable for temporary marking of workplaces, outdoors.
- b) It shall be similar to the free standing safety sign in Fig 9 but have inscriptions 'Men at Work' marked on both sides instead. The size shall be 310mm width and 620mm height (approx).
- c) It shall be supplied packaged as one piece.

5. TESTS AND INSPECTION

- 5.1 The safety signs and accessories shall be inspected and tested to ISO standards including the relevant requirements of ISO 3864-1, ISO 17398, ISO 7010, ISO 3864 and the requirements of this specification. It shall be the responsibility of the supplier and manufacturer to test or to have carried out all the relevant tests.
- 5.2 Copies of previous certificates 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 Certificates to the ISO standards for the safety signs and accessories to be supplied shall be submitted to KPLC for approval before shipment/delivery of the goods.
- 5.4 On receipt of the safety signs & accessories, KPLC will inspect them and may perform or have performed any of the relevant tests in order to verify compliance with the specification. The supplier shall replace without charge to KPLC, any Safety Signs & Accessories which upon examination/inspection, test or use fail to meet any or all of the requirements in the specification.

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6. MARKING AND INSTRUCTIONS

6.1 The following information shall be marked legibly and in a permanent manner on each of the Safety Signs & Accessories:

- a) The manufacturer's name or trade mark;
- b) The letters 'KPLC';

Note: The above marking is in addition to that required for each safety sign and accessory.

6.2 Instructions for use shall be included in each package (in English language).

6.3 A sample of each item to be supplied shall be submitted with tender for evaluation. The samples shall be evaluated for quality, marking, materials, suitability of dimensions/size, colours among other tests.

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ANNEX A:Guaranteed Technical Particulars (to be filled and signed by the Manufacturer and submitted together with copies of manufacturer's catalogues, brochures, drawings, technical data, sales records, customer reference letters and copies of certificates to ISO standards for tender evaluation)

Tender No.

| Clause number | Bidder's offer (indicate full details of the offered safety signs & accessories for each requirement of the specification) |
|--|--|
| Manufacturer & country | |
| 1 Scope | |
| 2 Applicable Standards | |
| 3 Terms & Definitions | |
| 4.1 General Requirements (4.1.1 to 4.1.4) | |
| 4.2.1 Traffic Cones -requirements (a) to (e) | |
| 4.2.2 Barricade Tapes – requirements (a) to (e), Type 1 & 2 | |
| 4.2.3 Tape Dispenser – requirements (a) to (d) | |
| 4.2.4 Safety Tags – requirements (a) to (f), Type 1 & 2 | |
| 4.2.5 Warning Tags – requirements (a) to (h), Type1, 2 & 3 | |
| 4.2.6 Lockout – requirements (a) to (d) | |
| 4.2.7 Labelled Safety Lockout Hasp – requirements (a) to (g) | |
| 4.2.8 Flexible Steel Wire Cable – requirements (a) to (d) | |
| 4.2.9 Free Standing Safety Sign (a) to c) | |
| 4.2.10 Men at Work Sign requirements (a) to (d) | |
| 5.1 Test standards | |
| 5.2 Copies of previous certificates | |
| 5.3 Copies of certificates before delivery | |
| 5.4 Inspection by KPLC at stores & suppliers guarantee | |
| 6.1 Marking | |
| 6.2 Instructions | |
| 6.3 Sample of each item submitted with tender | |

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

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