



The Kenya Power & Lighting  
Co. Ltd.

TITLE:

**SPECIFICATION FOR SAFETY  
BELTS**

Doc. No. KPLC1/3CB/TSP/09/002

Issue No. 1

Revision  
No. 0

Date of  
Issue 2008-03-30

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### 0.1 Circulation List

COPY NO.	COPY HOLDER
1	Research & Development Manager
2	Supplies Manager
3	Stores & Stock Control Manager
4	Distribution Manager
5	Assistant Manager, Technical Audit

### 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 liaison with the Distribution Department both of The Kenya Power and Lighting Company Limited (KPLC) and it lays down requirements for Safety Belts for use by Linesmen when working on power poles. It is intended for use by KPLC in purchasing the equipment.

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

**1 SCOPE**

This standard specifies requirements for safety belts for use on wood poles.

It covers safety belts intended for work positioning and support of the worker at a height including the prevention of free falls.

**2 REFERENCES**

The following documents were referred to during the preparation of this specification, in case of conflict the requirements of this specification shall take precedence.

BS EN 358: Personal protective equipment for work positioning and prevention of falls from a height. Belts for work positioning and restraint and work positioning lanyards.

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

**3 TERMS AND DEFINITIONS**

The terms and definitions in the reference standards shall apply.

**4 REQUIREMENTS**

**4.1 Service Conditions**

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The safety belts and components/accessories shall be suitable for continuous use outdoors in tropical areas at altitudes of up to 2200m above sea level, humidity of up to 90%, average ambient temperature of +30°C with a minimum of -1°C and a maximum of +40°C and Tropical Sunshine conditions.

## 4.2 General Requirements

- 4.2.1 The waist belt shall be designed for use by linesmen and other workers required to work on poles or other structures in a supported position thereby enabling them to have both hands free for working.
- 4.2.2 The waist belt shall encircle the body and shall comprise elements, which suitably arranged and assembled and with a work positioning lanyard support the wearer during work at a height. The work positioning lanyard shall connect the waist belt around a pole/structure.
- 4.2.3 The waist belt and positioning lanyard shall have dielectric characteristics and resistance to creosote and other pole-treatment chemicals.

## 4.3 Waist Belt

- 4.3.1 Webbing and thread elements shall be made from synthetic fibres (polyamide or polyester) suitable for the use intended. Sewing threads shall be physically compatible with and of comparable quality to that of the webbing and shall be of a contrasting shade or colour from that of the webbing in order to facilitate visual inspection.
- 4.3.2 The waist belt shall have either a minimum of two attachment elements or an integral work positioning lanyard and one attachment element for attaching the work positioning lanyard.
- 4.3.3 The waist belt shall be not less than 43mm wide and shall be capable of adjustment to fit the wearer.
- 4.3.4 The waist belt shall be fitted with a back support padded with sponge rubber for added comfort.
- 4.3.5 The back support shall be designed so as to give adequate support to the worker without preventing normal movement. The minimum length of the back support shall be 50mm longer than half the circumference of the belt when adjusted to the maximum radial length (waist size) specified by the manufacturer. Minimum width is

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100mm on a length of 200mm in the centre and 60mm on other parts of the back support.

- 4.3.6 The circumference of the waist belt when adjusted to the maximum radial length (waist size) shall be 1200mm. The minimum waist size shall be 700mm.
- 4.3.7 The fastening and adjustment elements of a waist belt shall be designed and constructed so that when correctly fastened, involuntary release or opening of the element cannot occur.
- 4.3.8 When tested in accordance with BS EN 358, the waist belt shall have a static strength of 15kN.
- 4.3.9 The waist belt shall withstand the dynamic strength test described in 5.3 of BS EN 358.

**4.4 Work Positioning Lanyard (pole strap).**

- 4.4.1 The work positioning lanyard shall be so designed and constructed that an involuntary release of the work positioning lanyard from the waist belt is prevented.
- 4.4.2 The work positioning lanyard shall be equipped with a length adjuster and shall have a max length of 2m under all normal circumstances.
- 4.4.3 Webbing used in the manufacture of work positioning lanyards shall have a minimum breaking force of 22kN.
- 4.4.4 The webbing and threads shall be made from synthetic fibres (polyamide or polyester) suitable for the use intended. Sewing threads shall be physically compatible with and of comparable quality to that of the webbing and should be of a contrasting shade or colour from that of the webbing in order to facilitate inspection.
- 4.4.5 When tested as described in 5.2 of BS EN 358 with a force of 15kN the work positioning lanyard shall not break.
- 4.4.6 The work positioning lanyard shall meet the requirements of the dynamic strength test of BSEN 358.

**4.5 Connectors**

- 4.5.1 Connectors shall comply with BS EN 362.

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4.5.2 All metal components shall be smoothly finished, free from any defect due to faulty material or manufacture and adequately protected against corrosion. Corrosion test requirements shall be as per BS EN 358.

4.5.3 In order to reduce the probability of involuntary opening, hooks and karabiners at the free end of the waist belt and work positioning lanyard shall be self-closing and self-locking and shall be capable of being opened only by at least two consecutive deliberate actions.

**5 TESTS AND INSPECTION**

5.1 Static strength test and dynamic strength tests shall be done in accordance with BS EN 358. It shall be the responsibility of the manufacturer to perform or to have performed all the tests specified.

5.2 Copies of previous Test Reports certified by the relevant International or National Testing/ Standards Authority of the country of manufacture (or ISO/IEC 17025 accredited laboratory) shall be submitted with the tender (including certificate of accreditation for laboratory) for the purpose of technical evaluation, all in English Language.

5.3 A sample of the safety belt offered shall be submitted for tender evaluation. The sample shall be accompanied with details on application and instructions for use, all in English Language.

5.4 In the case of Tender award Test Reports for the safety belts manufactured for the purchaser (KPLC) shall be submitted to KPLC for approval before shipment/delivery.

5.5 On receipt of the goods the KPLC shall perform or have performed any of the tests specified in order to verify compliance with specification.

5.6 The manufacturer or supplier shall replace without charge to KPLC safety belts which upon examination or test within six (6) months of initial delivery of the shipment fail to meet any of the requirements in the specification.

**6 INSTRUCTIONS, MARKING AND PACKING**

6.1 Instructions for use and maintenance printed in the English Language shall be included in each package.

6.2 Each waist belt shall be clearly, indelibly and permanently marked with the following information (all in English language).

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- Standard to which it complies.
- Name, country and trademark of manufacturer.
- Type (product identification) and size.
- Year and month of manufacture.
- The identity of the fibre used as the material of construction.
- Warning to heed manufacturer's instructions.

6.3 Each waist belt and positioning lanyard shall be supplied wrapped in moisture proof material.

**ANNEX A: Technical Particulars (to be filled and signed by the Manufacturer for all clauses and submitted together with catalogues, brochures, drawings, technical data and test reports for tender evaluation)**

**Tender No.**.....

Clause Number	Bidder's offer	Manufacturer's catalogue, drawing, technical data or tests report <u>Reference Page</u> to support the offer.

**NB:** - 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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