



Kenya Power

PERSONAL PROTECTIVE EQUIPMENT – FOOTWEAR

Part 3: FOOTWEAR FOR KITCHEN STAFF —
SPECIFICATION



Kenya Power

Kenya Power & Lighting Co. Ltd

TITLE:

**PERSONAL PROTECTIVE
EQUIPMENT – FOOTWEAR.**
**Part 3: FOOTWEAR FOR KITCHEN
STAFF — SPECIFICATION**

Doc. No.

KP1/6C/4/1/TSP/01/010-3

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REVISION OF KPLC STANDARDS

To keep abreast of progress in the industry, KPLC standards shall be regularly reviewed. Suggestions for improvements to approved standards, addressed to the Manager, Standards department, are welcome.

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0.2 Amendment Record

Rev No.	Date (YYYY-MM-DD)	Description of Change	Prepared by (Name & Signature)	Approved by (Name & Signature)
Issue 1 Rev 0	2017-08-25	New issue	Rotich Benard	Dr. Eng. P. Kimemia

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FOREWORD

This specification has been prepared by the Standards Department in collaboration with Human Resource & Administration Department of the Kenya Power and Lighting Company Limited (KPLC/Kenya Power). The specification lays down requirements for safety and hygiene footwear for kitchen staff.

Other Kenya Power specifications dealing with footwear and falling under the Kenya Power specification code *TSP/01/010*, and under the general title *Personal Protective Equipment – Footwear*, are listed below:

TSP/01/010-1: Personal Protective Equipment (PPE) – Footwear. Part 1: Safety boots — Specification

TSP/01/010-2: Personal Protective Equipment (PPE) –Footwear. Part 2: Safety shoe — Specification

This specification defines requirements for safety shoes for both men and women. Until recently, women working in hazardous environments, from civil engineering, to construction, manufacturing, warehousing and so forth often settled for safety footwear in the nearest male size to their own size. However, for safer footwear to provide the utmost benefits that it was designed for, it must fit the wearer well. Besides just the size, there are some fundamental differences between men and women's feet that can make all the difference when it comes to safety.

The main difference between the two is the relationship between the heel and the forefoot, or 'ball' of the foot. Most women have a narrower heel in relation to the circumference of the ball of their foot. So, to put this into perspective, a woman who wears a size 9 ladies shoe will more than likely have a narrower heel; a wider ball and bigger ball girth than a man who wears a size 7 men's shoe. Therefore, what might be perceived as the male 'equivalent' will actually provide a very poor fit, thus may well compromise not only comfort, but health and safety too.

So ideally, ladies' safety footwear should be designed using female 'lasts', ensuring that the women's safety shoes fit, not only women's sizes, but female foot shapes too.

The following are members of the team that developed this specification:

Name	Department
Ruth Kariuki	Human Resource
Rotich Benard	Standards

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1. SCOPE

This specification covers the requirements for safety and hygiene footwear for kitchen staff, which are intended to protect the wearer against mechanical injuries, slips, shocks and for antistatic protection. It also specifies the requirements for protection, ergonomic characteristics, innocuousness, mechanical properties, marking and information for users.

The footwear covered are:

- a) Lady safety shoes
- b) Waiter Shoes
- c) Waitress shoes
- d) Clogs (cooks) shoes

2. REFERENCES (NORMATIVE)

The following standards contain provisions which through reference in this text constitute provisions of this specification. For dated editions, the cited edition shall apply; for undated editions, the latest edition of the referenced document shall apply.

- BS EN 12568: Foot and leg protectors — Requirements and test methods for toecaps and metal penetration resistant inserts
- ISO 13287: Personal protective equipment — Footwear. Test method for slip resistance
- ISO 17075-1: Leather - Chemical determination of chromium(VI) content in leather. Part 1: Colorimetric method
- ISO 20344: Personal protective equipment — Test methods for footwear
- ISO 20345: Personal protective equipment — Safety footwear
- ISO 20346: Personal protective equipment — Protective footwear

3. DEFINITIONS AND ABBREVIATIONS

- 3.1. For this specification, the definitions and abbreviations given in the reference standards shall apply.
- 3.2. Kenya Power Logo – As per sample available with the Human Resource Division, Kenya Power

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4. REQUIREMENTS

4.1. Service conditions

The footwear shall be suitable for use indoors and outdoors in tropical areas and harsh climatic conditions including areas exposed to:

- a) Altitudes of up to 2200m above sea level
- b) Humidity of up to 95%
- c) Average ambient temperature of +30°C with a minimum of -1°C and a maximum of +40°C, in direct sunlight,

4.2. Materials and Construction

4.2.1. Lady safety Shoes

4.2.1.1. General Design

4.2.1.1.1. The safety shoe shall be designed and manufactured in accordance with ISO 20346 and tested in accordance with ISO 20344 and provisions of this specification.

4.2.1.1.2. The safety shoe shall be classified as code designation I, class A - low shoe as per ISO 20346:2004 and shall be made from leather and other materials, excluding all-rubber or all-polymeric footwear. The safety shoe shall resemble Fig. 1.

4.2.1.1.3. The safety shoe in this specification shall incorporate protective features to protect the wearer from injuries which could arise through accidents, fitted with toecaps, designed to give protection against impact when tested at an energy level of at least 200J and against compression when tested at a compression load of at least 15kN.

4.2.1.1.4. Safety shoe shall comply with the basic requirements of this specification. It shall be complete with full in-sock, removable and not water permeable as per Table 3 of ISO 20346.

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Figure 1: Typical Lady safety shoe

4.2.1.2. Sole performance

4.2.1.2.1. Construction

The insole shall be present in such a way that it cannot be removed without damaging the footwear.

4.2.1.2.2. Upper/outsole bond strength

When footwear, other than with a stitched sole, is tested in accordance with the method described in EN ISO 20344, clause 5.2, the bond strength shall be not less than 4.0 N/mm, unless there is tearing of the sole, in which case the bond strength shall be not less than 3.0 N/mm.

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4.2.1.3. Toe protection

4.2.1.3.1. General

- 4.2.1.3.1.1. Toecaps shall be incorporated in the footwear in such a manner that they cannot be removed without damaging the footwear.
- 4.2.1.3.1.2. The footwear shall be fitted with internal toecaps and shall have a vamp lining or an element of the upper that serves as a lining, and in addition the toecaps shall have an edge covering extending from the back edge of the toecap to at least 5 mm beneath it and at least 10 mm in the opposite direction.
- 4.2.1.3.1.3. Toecaps shall fulfil the requirements given in Clause 4.2.2.2 of BS EN 12568
- 4.2.1.3.1.4. Scuff resistant coverings for the toe region shall be not less than 1 mm in thickness.

4.2.1.3.2. Internal length of toecaps

When measured in accordance with the method described in ISO 20344, clause 5.3, the internal toecap length shall be in accordance with Table 1 below.

Table 1: Minimum internal length of toecaps

Footwear size	Minimum internal lengths, mm
36 and below	34
37 and 38	36
39 and 40	38
41 and 42	39
43 and 44	40
45 and above	42

4.2.1.3.3. Impact resistance of protective footwear

When protective footwear is tested in accordance with the method described in ISO 20344, clause 5.4, at impact energy of at least $200 \text{ J} \pm 5 \text{ J}$, the clearance under the toecap at the moment of impact shall be in accordance with Table 2 of this specification. In addition, the toecap shall not develop any cracks on the test axis which go through the material, i.e. through which light can be seen.

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4.2.1.3.4. **Compression resistance of protective footwear**

When protective footwear is tested in accordance with ISO 20344, clause 5.5, the clearance under the toecap at a compression load of $15\text{kN} \pm 0.1\text{kN}$ shall be in accordance with Table 2 below.

Table 2: Minimum clearance under toecaps at impact

Footwear size	Minimum clearance, mm
36 and below	12.5
37 and 38	13.0
39 and 40	13.5
41 and 42	14.0
43 and 44	14.5
45 and above	15.0

4.2.1.3.5. **Behaviour of toecaps**

4.2.1.3.5.1. **Corrosion resistance of metallic toecaps**

Metallic toecaps to be used in classification I footwear when tested and assessed in accordance with EN ISO 20344, clause 5.6.2, shall exhibit no more than five areas of corrosion, none of which shall exceed 2.5 mm^2 in area.

4.2.1.3.5.2. **Non-metallic toecaps**

Non-metallic toecaps used in protective footwear shall comply with the requirements of EN 12568, clause 4.3.

4.2.1.4. **Specific ergonomic features**

The footwear shall be considered to satisfy the ergonomic requirements if all the answers are positive in the questionnaire given in ISO 20344, clause 5.1.

4.2.1.5. **Tear strength**

When determined in accordance with ISO 20344, clause 6.3, the tear strength of the upper of classification I footwear shall be 120N.

4.2.1.6. **Tensile properties**

When determined in accordance with ISO 20344, Clause 6.4, Table 7, the minimum tensile strength shall be 15N/mm^2 and minimum breaking force of 180N.

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4.2.1.7. Water vapour permeability and coefficient

When tested in accordance with ISO 20344, clauses 6.6, and 6.8, the water vapour permeability shall not be less than 2.0 mg/(cm²·h) and the water vapour coefficient shall be not less than 20 mg/cm².

NOTE: *There is no requirement to test unlined stiffeners*

4.2.1.8. pH value

When leather uppers are tested in accordance with ISO 20344, Clause 6.9, the pH value shall be not less than 3.2 and, if the pH value is below 4, the difference figure shall be less than 0.7.

4.2.1.9. Chromium VI content

When determined in accordance with the test method described in ISO 17075-1, the quantity of chromium VI in footwear containing leather shall not exceed 3.0 mg/kg.

4.2.1.10. Lining

NOTE: *The following requirements are applicable to vamp lining and quarter lining.*

4.2.1.10.1. Tear strength

When determined in accordance with ISO 20344, Clause 6.3, the minimum tear force of the lining shall be 30N.

4.2.1.10.2. Abrasion resistance

When tested in accordance with ISO 20344, clause 6.12, the lining shall not develop any holes before the following number of cycles has been performed:

- a) Dry: 25 600 cycles;
- b) Wet: 12 800 cycles.

4.2.1.10.3. Water vapour permeability and coefficient

When tested in accordance with ISO 20344, clauses 6.6, and 6.8, the water vapour permeability shall be not less than 2.0 mg/(cm²·h) and the water vapour coefficient shall be not less than 20 mg/cm².

NOTE: *There is no requirement to test unlined stiffeners.*

4.2.1.10.4. pH value

When leather linings are tested in accordance with ISO 20344, clause 6.9, the pH value shall be not less than 3.2 and, if the pH value is below 4, the difference figure shall be less than 0.7.

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4.2.1.10.5. Chromium VI content

When determined in accordance with the test method described in ISO 17075-1, the quantity of chromium VI in footwear containing leather shall not exceed 3.0 mg/kg.

4.2.1.11. Tongue

NOTE: *The tongue need only be tested if the material from which it is made or its thickness differs from that of the upper material.*

4.2.1.11.1. Tear strength

When determined in accordance with ISO 20344, clause 6.3, the minimum tear force of the tongue shall be 36N.

4.2.1.11.2. pH value

When leather tongues are tested in accordance with ISO 20344, clause 6.9, the pH value shall be not less than 3.2 and, if the pH value is below 4, the difference figure shall be less than 0.7.

4.2.1.11.3. Chromium VI content

When determined in accordance with the test method described in ISO 17075-1, the quantity of chromium VI in footwear containing leather shall not exceed 3.0 mg/kg.

4.2.1.12. Insole and Insock

4.2.1.12.1. Thickness

When determined in accordance with ISO 20344, clause 7.1, the thickness of the insole shall be not less than 2.0 mm.

4.2.1.12.2. pH value

When leather insoles or leather in-socks are tested in accordance with ISO 20344, clause 6.9, the pH value shall be not less than 3.2 and, if the pH is below 4, the difference figure shall be less than 0.7.

4.2.1.12.3. Water absorption and desorption

When tested in accordance with ISO 20344, clause 7.2, the water absorption shall be not less than 70 mg/cm² and the water desorption shall be not less than 80 % of the water absorbed.

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4.2.1.12.4. Abrasion resistance

4.2.1.12.4.1. Insoles

When non-leather insoles are tested in accordance with ISO 20344, 7.3, the abrasion damage shall not be more severe than that illustrated by the reference test pieces for the same family of materials before 400 cycles. (See ISO 20344, clause 7.3.6).

4.2.1.12.4.2. Insocks

When non-leather insocks are tested in accordance with ISO 20344, clause 6.12, the wearing surface shall not develop any holes before the following number of cycles has been performed

- Dry: 25 600 cycles;
- Wet: 12 800 cycles.

4.2.1.12.5. Chromium VI content

When determined in accordance with the test method described in ISO 17075-1, the quantity of chromium VI in footwear containing leather shall not exceed 3.0 mg/kg.

4.2.1.13. Outsole

4.2.1.13.1. Thickness of non-cleated outsoles

When tested in accordance with EN ISO 20344, 8.1, the total thickness of a non-cleated outsole, at any point, shall be not less than 6 mm.

4.2.1.13.2. Tear strength

When non-leather outsoles are tested in accordance with ISO 20344, clause 8.2, the tear strength shall be not less than:

- 8 kN/m for a material with a density higher than 0.9 g/cm³;
- 5 kN/m for a material with a density lower or equal to 0.9 g/cm³

4.2.1.13.3. Abrasion resistance

When non-leather outsoles other than those from all-rubber or all-polymeric footwear are tested in accordance with ISO 20344, clause 8.3, the relative volume loss shall be not greater than 250 mm³ for materials with a density of 0.9 g/cm³ or less and not greater than 150 mm³ for materials with a density greater than 0.9 g/cm³.

4.2.1.13.4. Flexing resistance

When non-leather outsoles are tested in accordance with ISO 20344, clause 8.4, the cut growth shall be not greater than 4 mm before 30 000 flex cycles.

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4.2.1.13.5. Hydrolysis

When polyurethane outsoles and soles with an outer layer composed of polyurethane are tested in accordance with ISO 20344, clause 8.5, then the cut growth shall be not greater than 6 mm before 150 000 flex cycles.

4.2.1.13.6. Interlayer bond strength

When tested in accordance with ISO 20344, clause 5.2, the bond strength between the outer or cleated layer and the adjacent layer shall be not less than 4.0 N/mm unless there is tearing of any part of the sole, in which case the bond strength shall be not less than 3.0 N/mm.

4.2.1.13.7. Resistance to fuel oil

4.2.1.13.7.1. When tested in accordance with ISO 20344, clause 8.6.1, the increase in volume shall be not greater than 12%.

4.2.1.13.7.2. If after testing in accordance with ISO 20344, clause 8.6.1, the test piece shrinks by more than 0.5 % in volume or increases in hardness by more than 10 Shore A hardness units, a further test piece shall be taken and tested in accordance with the method described in ISO 20344, clause 8.6.2, and the cut growth shall be not greater than 6 mm before 150 000 flex cycles.

4.2.1.14. Colour and Weight of the Safety Shoe

4.2.1.14.1. Weight

The lady safety shoes shall be light weight and shall not be more than 500 g.

4.2.1.14.2. Colour finish

The safety shoes in this specification shall have a black colour finish.

4.2.2. Waiter Shoes

4.2.2.1. The waiter shoes shall be designed manufactured in accordance with ISO 20346, tested in accordance with ISO 20344 and provisions of this specification.

4.2.2.2. The waiter shoes shall be of class S2 SRC in accordance with ISO 20345: 2011. The shoe shall be as per Fig. 2.

4.2.2.3. Other special requirements shall be as per Table 3 below.

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Table 3: Waiter Shoes Properties Requirements

No	Property	Requirement
1.	Upper Material	Microfiber Water resistant upper in microfiber
2.	Lining Material	Polyamide Absorbent non-woven lining for quick dry
3.	Insole material	Preformed removable Polyester on EVA (Ethylene-vinyl acetate)
4.	Outsole	Injected PU (polyurethane) bi-density
5.	Washing	Machine wash up to 30°C, easy to maintain.
6.	Shoe Colour	Black



Figure 2: Typical Waiter Shoe

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4.2.3. Waitress Shoes

- 4.2.3.1. The waitress shoes shall be designed and manufactured in accordance with ISO 20345:2011, tested in accordance with ISO 20344 and provisions of this specification.
- 4.2.3.2. The waiter shoes shall be of class S2 SRC in accordance with ISO 20345: 2011. The shoe shall be as per Fig. 3.
- 4.2.3.3. Other special requirements shall be as per Table 4 below.

Table 4: Waitress Shoes Properties Requirements

No	Property	Requirement
1.	Upper Material	Microfiber Water resistant upper in microfiber
2.	Lining Material	Polyamide Absorbent non-woven lining for quick dry
3.	Insole material	Preformed removable Polyester on EVA (Ethylene-vinyl acetate)
4.	Outsole	Injected PU (polyurethane) bi-density
5.	Washing	Machine wash up to 30oC, easy to maintain.
6.	Shoe Colour	Black



Figure 3: Typical Waitress Shoes

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4.2.4. Clogs (cooks) shoes

- 4.2.4.1. The chef's clogs shall be unisex suitable for both men and women working in kitchen, catering, food service and hospitality industry.
- 4.2.4.2. The clogs inner lining shall be soft, absorbent non-woven lining for quick dry, comfortable and easy to clean.
- 4.2.4.3. The closure shall be slip-on with adjustable back strap and closed toe section. The heel height shall be 1" (inch). They shall be light weight with super comfort foot bed made of nice soft EVA foam material.
- 4.2.4.4. The clog shoes shall provide slip resistance that is required in industry standards.
- 4.2.4.5. Other special requirements shall be as per Table 5 below.

Table 5: Waitress Shoes Properties Requirements

No	Property	Requirement
1.	Upper Material	Microfiber Water resistant upper in microfiber
2.	Lining Material	Polyamide Absorbent non-woven lining for quick dry
3.	Insole material	Preformed removable Polyester on EVA (Ethylene-vinyl acetate)
4.	Outsole	Injected PU (polyurethane) bi-density
5.	Washing	Machine wash up to 30oC, easy to maintain.
6.	Shoe Colour	Black
7.	Product Use	Anti-slip, hygiene environment



Figure 4: Typical Clogs

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5. TESTS AND ACCEPTANCE REQUIREMENTS

- 5.1. The footwear shall be inspected and tested in accordance with ISO 20345, ISO 20344, EN 12568 and the requirements of this specification.
- 5.2. Copies of previous Test Reports confirming full conformance to clause 4 requirements for the protective shoes issued by a third-party testing laboratory that is accredited to ISO/IEC 17025 shall be submitted with the tender for the purpose of technical evaluation. The accreditation certificate for the third-party testing laboratory shall also be submitted with the tender (all in English Language).
- 5.3. The shoes shall be subject to acceptance tests at the manufactures' works before dispatch. Acceptance tests (routine & sample tests) will be witnessed by two Engineers appointed by The Kenya Power and Lighting Company Limited (KPLC). Routine and sample test reports for the footwear to be supplied shall be submitted to KPLC for approval before shipment of the goods. The routine tests to be witnessed shall include the tests in Clause 5.4.
- 5.4. Tests to be witnessed by KPLC Engineers at the factory before shipment shall be in accordance with ISO 20345, ISO 20344, EN 12568 and this specification and shall include all the tests in clause 4.3 and 4.4 on the following parts:
 - (i) Footwear design tests
 - (ii) Tests on the whole footwear
 - (iii) Tests on the tongue
 - (iv) Tests on the outsole
 - (v) Tests on the insole and insock
 - (vi) Tests on the lining
 - Vamp lining
 - Quarter lining

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Kenya Power & Lighting Co. Ltd

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Part 3: FOOTWEAR FOR KITCHEN
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6. MARKING AND PACKING

6.1. Marking

Each item of protective footwear shall be clearly and permanently marked, for example by embossing or branding, with the following:

- a) Size;
- b) Manufacturer's identification mark;
- c) Manufacturer's type designation;
- d) Year of manufacture and at least quarter;
- e) The number and year of the standard of manufacture, i.e. ISO 20345:2011;
- f) The symbol(s) from table 14 of ISO 20345:2003 appropriate to the protection provided or, where applicable;
- g) The appropriate Category (S3), as described in Table 16 of ISO 20345:2003.
- h) The words, "**Property of KPLC**".

NOTE: *The markings for e) and f) should be adjacent to one another.*

6.2. Packaging

The packaging in which the shoe is delivered or is to be delivered shall have indelibly printed on it or otherwise permanently affixed to it, clearly and prominently displayed, the information required by clause 6.1.

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APPENDICES

APPENDIX A: TESTS AND INSPECTION (NORMATIVE)

- A.1. It shall be the responsibility of the manufacturer to perform or to have performed the tests in accordance with ISO 20345, ISO 20344, EN 12568 and the requirements of this specification.
- A.2. On receipt of the shoes 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, shoes which upon examination, test or use fail to meet any of the requirements in the specification.

APPENDIX B: QUALITY MANAGEMENT SYSTEM (NORMATIVE)

- B.1. The supplier shall submit a quality assurance plan (QAP) that will be used to ensure that the requirements for protection, ergonomic characteristics, innocuousness, mechanical properties, marking of the safety shoe, will fulfil the requirements stated in the contract documents, standards, specifications and regulations
- B.2. The Manufacturer's Declaration of Conformity to applicable standards and copies of quality management certifications shall be submitted with the tender for evaluation.
- B.3. The bidder shall indicate the delivery time of the footwear, manufacturer's monthly and annual production capacity and experience in the production of the type and size of items being offered. A detailed list and contact addresses (including e-mail) of the manufacturer's previous customers for similar type of the shoe sold in the last five years as well as reference letters from at least four of the customers shall be submitted with the tender for evaluation.

APPENDIX C: TECHNICAL DOCUMENTATION (NORMATIVE)

- C.1. The bidder shall submit its tender complete with technical documents required for tender evaluation. The technical documents to be submitted (all in English language) for tender evaluation shall include the following:
- a) Fully-filled clause by clause Guaranteed Technical Particulars (GTPs)- Appendix D - stamped and signed by the manufacturer.
 - b) Copies of the Manufacturer's catalogues, brochures, drawings and technical data;
 - c) Sales records for the last five years and at least four customer reference letters;

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- d) Details of the manufacturer's experience;
- e) Copies of required test reports by a third-party testing laboratory accredited to ISO/IEC 17025 and a copy of accreditation certificate to ISO/IEC 17025 for the third-party testing laboratory;
- f) Manufacturers letter of authorization, Quality Management System (QMS) certificate and other technical documents required in the tender.
- g) Packaging details (including packaging materials).

C.2. The successful bidder (supplier) shall submit the following documents/details to The Kenya Power & Lighting Company for approval before manufacture:

- a) Fully filled clause by clause Guaranteed Technical Particulars (GTPs) stamped and signed by the manufacturer **(these are not the ones submitted with the tender)**;
- b) Drawings and technical data of the footwear; stamped and signed by the manufacturer.
- c) Copies of the Manufacturer's catalogues, brochures, drawings and technical data;
- d) Detailed test program to be used during factory testing
- e) Marking details and the method to be used in marking the footwear
- f) Copies of required test reports by a third-party testing laboratory accredited to ISO/IEC 17025 and a copy of accreditation certificate to ISO/IEC 17025 for the third-party testing laboratory;
- g) Manufacturer's undertaking to ensure adequacy of the design, good engineering practice, adherence to the specification and applicable standards and regulations as well as ensuring good workmanship in the manufacture of the footwear for Kenya Power.
- h) Packing details

C.3. Test Reports for the footwear to be supplied under the contract shall be submitted to The Kenya Power & Lighting Company for approval before shipment/delivery and shall include all the tests including the following:

- (i) Footwear design tests
- (ii) Tests on the whole footwear
- (iii) Tests on the tongue
- (iv) Tests on the outsole
- (v) Tests on the insole and insock
- (vi) Tests on the lining

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- Vamp lining
- Quarter lining

C.4. The shoes shall be supplied with information written in English language to Kenya Power stores. All information shall be unambiguous. The following information shall be given:

- a) Name and full address of the manufacturer and/or his authorized representative;
- b) Notified body involved in type examination; for category III products the notified body involved with article 11;
- c) Number and year of the standard;
- d) Explanation of any pictograms, markings and levels of performance. A basic explanation of the tests that have been applied to the footwear, if applicable;
- e) Instructions for use:
 - i. Tests to be carried out by the wearer before use, if required;
 - ii. Fitting; how to put on and take off the footwear, if relevant;
 - iii. Application; basic information on possible uses and, where detailed information is given, the source;
 - iv. Limitations of use (e.g. temperature range, etc.);
 - v. Instructions for storage and maintenance, with maximum periods between maintenance checks (if important, drying procedures to be defined);
 - vi. instructions for cleaning and/or decontamination;
 - vii. Obsolescence deadline or period of obsolescence;
 - viii. If appropriate, warnings against problems likely to be encountered (modifications can invalidate the type approval, e.g. orthopaedic footwear);
 - ix. If helpful, additional illustrations, part numbers etc.
- f) Reference to accessories and spare parts, if relevant;
- g) The type of packaging suitable for transport, if relevant.

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APPENDIX D: GUARANTEED TECHNICAL PARTICULARS (GTPS) — NORMATIVE

(to be filled, stamped and signed by the Supplier and submitted together with relevant copies of the Manufacturer's catalogues, brochures, drawings, technical data, sales records for previous five years, four customer reference letters, details of suppliers' capacity and experience; and copies of complete test certificates and test reports for tender evaluation or approval, all in English Language, as per clauses C.1 and C.2)

Tender No.

Bidder's name and Address.....

Clause number	KPLC requirement	Bidder's offer
	Manufacturer's Name and address	Specify
	Country of Manufacture	Specify
	Bidder's Name and address	Specify
1.	Types of footwear offered	List
2.	Applicable Standards	Specify
3.	Definitions & Abbreviations	Specify
4.	REQUIREMENTS	
4.1	Service Conditions	Specify
4.2	Materials & Construction	
4.2.1	Lady Safety shoes	
4.2.1.1	General design	
4.2.1.1.1	Design and manufacture standards	Specify
4.2.1.1.2	Classification & material of manufacture as per ISO 20344 & fig 1	Specify
4.2.1.1.3	Protective features	Specify
	Protection against impact when tested at an energy level of at least 200J	
	Protection against compression when tested at a compression load of at least 15kN	Specify
4.2.1.1.4	Safety shoe complies with basic requirements as per Table 3 of the specification	Specify
4.2.1.2	Sole performance	
4.2.1.2.1	Insole cannot be removed without damage to the shoe	Specify
4.2.1.2.2	Upper/outsole bond strength >4.0 N/mm or > 3.0N/mm in case of tearing part.	Specify

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Clause number	KPLC requirement		Bidder's offer
4.2.1.3.1.1	Toecaps incorporation		Specify
4.2.1.3.1.2	Vamp lining and edge covering shall extend from the back edge of the toecap to at least 5 mm beneath it and at least 10 mm in the opposite direction		Specify
4.2.1.3.1.3	Toecaps fulfil requirements of Clause 4.2.2.2 of BS EN 12568:2010		Specify
4.2.1.3.1.4	Scuff resistant coverings shall not be less than 1 mm in thickness.		Specify
4.2.1.3.2	Minimum Internal length of toecaps shall be as per Table 1 of specification		Specify
4.2.1.3.3	Impact resistance of safety shoes tested as per EN ISO 20344, clause 5.4 shall be as per Table 2 of the specification		Specify
4.2.1.3.4	Minimum clearance under toecaps at compression as per Table 2 of this specification		Specify
4.2.1.3.5.1	When tested for Corrosion resistance, the metallic toecaps shall exhibit < 5 areas of corrosion, none of which shall exceed 2,5 mm ² in area		Specify
4.2.1.3.5.2	Non-metallic toecaps shall comply with Clause 4.3. of BS EN 12568		Specify
4.2.1.4	Specific ergonomic features satisfy ISO 20344 Clause 5.1 questionnaire answers		Specify
4.2.1.5	Tear strength of the lady safety shoe		State
4.2.1.6	Tensile properties when tested in accordance with ISO 20344	Minimum tensile strength	State
		Minimum breaking force	State
4.2.1.7	Water vapour permeability		State
	Water coefficient permeability		State
4.2.1.8	pH value		State
4.2.1.9	Chromium VI content tested as per ISO 17075-1		State
4.2.1.10.1	Lining minimum tear force when tested as per ISO 20344		State
4.2.1.10.2	Lining abrasion resistance when tested in accordance with ISO 20344, clause 6.12		specify
4.2.1.10.3	Lining water vapour permeability and coefficient	permeability > 2.0 mg/(cm ² ·h)	State
		Coefficient > 20 mg/cm ²	State
4.2.1.10.4	Lining pH value	shall be not less than 3.2	State
4.2.1.10.5	Chromium VI content	tested as per ISO 17075-1	Specify
4.2.1.11.1	Tongue minimum tear force		specify
4.2.1.11.2	Tongue pH value	shall be not less than 3.2	specify
4.2.1.11.3	Tongue Chromium VI content	tested as per ISO 17075-1	specify

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4.2.1.12.1	Insole Thickness	thickness of the insole >2.0 mm	specify
4.2.1.12.2	Insole pH value	shall be not less than 3.2	specify
4.2.1.12.3	Insole Water absorption and desorption	Absorption > 70 mg/cm ² Desorption >80 % of the water absorbed.	Prove compliance
4.2.1.12.4	Abrasion resistance tested as per ISO 20344	Insoles Insocks	Prove compliance
4.2.1.12.5	Insole Chromium VI content	tested as per ISO 17075-1	Prove compliance
4.2.1.13.1	Outsole Thickness of non-cleated outsoles	shall be not less than 6 mm	specify
4.2.1.13.2	Outsole Tear strength	>8 kN/m for a material with a density higher than 0.9 g/cm ³ >5 kN/m for a material with a density lower or equal to 0.9 g/cm ³	Prove compliance Prove compliance
4.2.1.13.3	Outsole Abrasion resistance	tested in accordance with ISO 20344, clause 8.3	Prove compliance
4.2.1.13.4	Outsole Flexing resistance	tested in accordance with ISO 20344, clause 8.4	Prove compliance
4.2.1.13.5	Outsole Hydrolysis	tested in accordance with ISO 20344, clause 8.5	Prove compliance
4.2.1.13.6	Outsole Interlayer bond strength	tested in accordance with ISO 20344, clause 5.2	Prove compliance
4.2.1.13.7	Outsole Resistance to fuel oil	Tested in accordance with ISO 20344, clause 8.6.1 Test in accordance with the method described in ISO 20344, clause 8.6.2	Prove compliance
4.2.1.14.1	Weight of the shoe		Provide
4.2.1.14.2	Colour of the safety shoe		Provide
4.2.2	Waiter Shoes		
4.2.2.1	Design and manufacture standards		Specify
4.2.2.2	Class and shape of the waiter shoes		Specify
4.2.2.3	1. Upper Material		Specify
	2. Lining Material		Specify
	3. Insole material		Specify

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Clause number	KPLC requirement	Bidder's offer
	4. Outsole	Specify
	5. Washing	Specify
	6. Shoe Colour	Specify
4.2.3	Waitress Shoes	
4.2.3.1	Design and manufacture standards	Specify
4.2.3.2	Class and shape of the waiter shoes	Specify
4.2.3.3	1. Upper Material	Specify
	2. Lining Material	Specify
	3. Insole material	Specify
	4. Outsole	Specify
	5. Washing	Specify
	6. Shoe Colour	Specify
4.2.4	Clogs (cooks) shoes	
4.2.4.1	Shoes shall be unisex	Specify
4.2.4.2	Clogs inner lining features	Specify
4.2.4.3	Heel height	Specify
4.2.4.4	Shoes shall meet slip resistance standards	Specify
Table 5	1. Upper Material	Specify
	2. Lining Material	Specify
	3. Insole material	Specify
	4. Outsole	Specify
	5. Washing	Specify
	6. Shoe Colour	Specify
	7. Product Use	Specify
5.	Tests and Acceptance Requirements	
5.1	Test standards and responsibility of carrying out tests	Provide
5.2	Copies of Type Test Reports submitted with tender	Provide
5.3	Acceptance tests to be witnessed by KPLC at factory before shipment	Provide
5.4	Test reports to be submitted by supplier to KPLC for approval before shipment	Provide
6.	Marking and Packing	
6.1	Markings	Provide
6.2	Packing	Provide
	Appendices	

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Clause number	KPLC requirement	Bidder's offer
A	Tests And Inspection (Normative)	
A1	Tests to be performed	State
A2	Supplier shall replace without charge to KPLC items that don't meet specification	State
B	Quality Management System (Normative)	
B1	QAP and ISO 9001:2008 /2015	State
B2	Copies of quality management certifications attached	State
B3	Delivery time, Production capacity & experience of the manufacturer	State
C	Technical Documentation (Normative)	
C1	Technical documents to be submitted with tender documents	
	a. Fully-filled clause by clause Guaranteed Technical Particulars (GTPs)- Appendix D - stamped and signed by the manufacturer.	
	b. Manufacturer's drawings and technical data;	state
	c. Test certificates	Specify
	d. Details of manufacturing capacity	State
	e. Sales records for previous five years and reference letters from at least four of the customers	State
C2	Documents to be submitted for approval before manufacture	
	a. Fully filled clause by clause Guaranteed Technical Particulars (GTPs)	State
	b. Drawings and technical data of the safety shoe	State
	c. Marking and packaging details	State
C3	Test Reports for the footwear to be submitted to The Kenya Power & Lighting Company for approval before shipment/delivery and shall include all the tests including the following	State
C4	Information to be supplied with the shoes	State

** Words like 'agreed', 'confirmed', 'As per KPLC specifications', etc. shall not be accepted and shall be considered non-responsive.*

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

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