



Kenya Power

TITLE:

**SPECIFICATION FOR
LAUNDRY SOAP**

Part 1: Grade 1

Doc. No.

KP1/3CB/TSP/08/002-1

Issue No.

1

Revision No.

0

Date of Issue

2014-03-27

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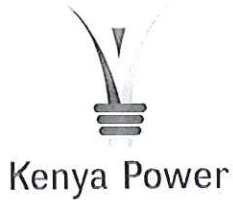
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0.1 Circulation List

COPY NO.	COPY HOLDER
1	Research & Development Manager
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0.2 Amendment Record

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FOREWORD

This specification has been prepared by the Research and Development Department of The Kenya Power and Lighting Company Limited (KPLC/Kenya Power) and it lays down requirements for laundry soaps in the form of bars, intended for use in washing clothes. It is intended for use by Kenya Power in purchasing the soaps.

1. SCOPE

This specification is for requirements for Grade I of laundry soaps in the form of bars, produced from vegetable or animal oils or fats or a blend of all or part of these materials.

- 1.1. This specification covers genuine or pure laundry soap - Grade I. The specification also covers inspection and test of the laundry soaps as well as schedule of Guaranteed Technical Particulars to be filled, signed by the supplier and submitted for tender evaluation.
- 1.2. The specification stipulates the minimum requirements for laundry soaps in the form of bars, intended for use in washing clothes in the company and it shall be the responsibility of the supplier 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 items for The Kenya Power & Lighting Company.
- 1.3. The specification does not purport to include all the necessary provisions of a contract.

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 684: Analysis of Soap – Determination of total free alkali,
- ISO 685: Analysis of Soap – Determination of total alkali content and total fatty matter content,
- ISO 1067: Analysis of Soap – Determination of unsaponifiable, unsaponified, and unsaponified saponifiable matter,
- ISO 457: Analysis of Soap – Determination of chloride content,

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- ISO 673: Analysis of Soap – Determination of ethanol insoluble matter,
- ISO 672: Analysis of Soap – Determination of moisture and volatile matter content,
- ISO 456: Surface-active agents – Determination of free caustic alkali,

3. TERMS AND DEFINITIONS

For the purpose of this specification, the definitions given in the reference standards shall apply together with the following:

- a) **Batch** - the soap from one vat or pan. In the continuous production process, the soap from one day's production shall constitute a batch.
- b) **Lot** - In a single consignment, all packages containing laundry soap bars or cakes drawn from the same batch of production shall constitute a lot.
- c) **DOT class** - Department of Transportation Hazard Classification System

4. REQUIREMENTS

4.1. Service Conditions

The laundry soaps in the form of bars shall be suitable for use in washing clothes. The clothes shall be used outdoors in tropical areas and the use of the soap shall not make the clothes to change its properties when exposed to these service conditions.

4.2. Design And Construction

- 4.2.1. **Grade I** laundry soaps shall be well saponified in form of firm bars, which in addition to moisture may contain a mounts of substances, such as well-dispersed and uniform colouring matter, perfume, preservatives, opacifiers and optical brightening agents.
- 4.2.2. The laundry soap shall be manufactured from palm or any other suitable vegetable oil/fatty acid (animal oils) to meet the requirements mentioned in the contract.
- 4.2.3. It shall be yellow/cream in colour resembling to pale or light straw or biscuit or champagne and shall be free from dirt and other foreign matter.
- 4.2.4. It shall be of firm texture i.e.it shall retain the shape till fully consumed and possess good lathering and cleaning properties.

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- 4.2.5. Laundry soap both as received and when dissolved in hot water, shall possess a pleasant odour and shall not develop an objectionable odour during storage at ambient temperature. It shall also not leave disagreeable or objectionable odour on clothes after washing and thoroughly rinsing with water.
- 4.2.6. When coloured laundry soap is used in washing any fabric, it shall not leave any visible stains on the fabrics after washing and thorough rinsing with water.
- 4.2.7. During certification, the manufacturer shall objectively demonstrate to the certification body or authority that the dyes used during soap manufacture had been properly evaluated with respect to the staining characteristics of fabrics.
- 4.2.8. All the ingredients used in the product shall be not injurious to health, shall be not cause irritation to the skin during use, shall be not damage the fabrics, and shall be environmentally safe, in particular:
- The phenolic substance such as cresylic acid if added shall have a maximum of 2.5 % by mass.
 - Moisture and volatile matter at $105^{\circ}\text{C} \pm 2^{\circ}\text{C}$ shall be 25 % by mass both at the time of inspection and receipt by the consignee.
 - Anhydrous soap content per bar shall be 675 g minimum and hex bromide tests shall be negative.

4.3. Dimensions and Weight of the Laundry Soap

The laundry soap shall be supplied in the form of bars having dimensions of approximately: 50mm x 50mm x 370 mm with minimum weight of 900 g.

4.4. Compositional Requirements

Laundry soap shall comply with the requirements in Table 1.

Table 1: Physical and chemical properties

Characteristics	Requirements % (m/m)	Methods of test
	Pure laundry soap Grade I	
Total Fatty Matter ¹ , (% m/m) min	62	ISO 685
Matter insoluble in ethanol ² (% m/m), max.	3.5	ISO 673
Free alkali as NaOH ² (% m/m) max.	0.2	ISO 456
Total free fat ² (unsaponified and unsaponifiable fatty matter), max	2	ISO 1067
Chloride content ² , as NaCl, (% m/m)	1.5	ISO 457

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Characteristics	Requirements % (m/m)	Methods of test
	Pure laundry soap Grade I	
Mushing properties/stability(loss in mass due mushing on a wet surface) (g/30cm ² , maximum)	To pass test	As per clause 4.5
Staining properties ³	To pass test	As per clause 4.2.7
Ratio between (actual fatty matter content x average mass of units) and (the specified minimum fatty matter x the specified unit mass), min	1.0	

¹ On the soap as received
² Corrected to a fatty matter content of 62 % (m/m) or 50% (m/m), in accordance with formula (1)
³ Test pieces of cloth of defined area are rubbed with soap and then dipped in water with overnight stay then scrubbed and rinsed in running water or subjecting fabrics to prolonged soaking in a highly concentrated soap solution.

NOTE: Allowance should be made for the loss of moisture of the soap on storage. The results for each of the above-specified methods of test shall be corrected in relation to the specified minimum total fatty matter by means of the equation:

$$\text{Corrected result} = \frac{\text{Actual result} \times \text{Minimum total fatty matter}}{\text{Actual total fatty matter}} \quad \text{-----1}$$

The corrected results shall be used to determine whether the product is up to standard.

4.5. Performance requirements

Requirement for stability - when subjected to mush tests, the laundry soap shall not disintegrate, and when dried at room temperature for 25 h thereafter, it shall not crumble, crack or break.

4.6. Sampling

- a) For ascertaining the conformity of the lot to the requirements of this standard, tests shall be carried out on each lot separately.
- b) The number of packages and product units from each container respectively to be selected for drawing the sample shall be in accordance with Table 2.
- c) The packages (cartons) shall be selected at random, using tables of random numbers. If these are not available, the following procedure shall be applied:

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- Starting from any package, count all the packages in one order as 1, 2, 3, N, selecting every kth package, where k is the integral part of $N \div n$.
- d) From each package thus selected, draw at random an equal number of bars so as to obtain a total mass of at least 2 kg.

Table 2 – Scale of Sampling

Number of packages (cartons) in the lot N	Number of containers (cartons) to be selected n	Number of product units to be selected from each container
4 to 15	3	3
16 to 40	4	4
41 to 65	5	2
66 to 110	7	2
111 and above	10	1

4.7. QUALITY MANAGEMENT SYSTEM

- 4.3.1. The supplier shall submit a quality assurance plan (QAP) that will be used to ensure that the laundry soaps physical properties, chemical composition, tests and documentation, will fulfill the requirements stated in the contract documents, standards, specifications and regulations.
- 4.3.2. The Manufacturer's Declaration of Conformity to applicable standards and copies of quality management certifications shall be submitted with the tender for evaluation.
- 4.3.3. The bidder shall indicate the delivery time of the items, manufacturer's monthly & annual production capacity and experience in the production of the type and size of items being offered. A detailed list & contact addresses (including e-mail) of the manufacturer's previous customers for similar type of the laundry soaps 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.

5. TESTS AND INSPECTION

- 5.1. The laundry soaps shall be inspected and tested in accordance with the requirements of the reference standards and this specification as per Table 1. It shall be the responsibility of the supplier to perform or to have performed all the tests specified.

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- 5.2. Copies of previous Test Reports for the laundry soaps 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. Test Reports for the laundry soaps to be supplied under the contract shall be submitted to The Kenya Power & Lighting Company for approval before shipment/delivery.
- 5.4. The laundry soaps shall be inspected and tested as per this specification before acceptance to The Kenya Power & Lighting Company stores. The supplier shall replace any items which fail to meet any of the requirements during inspection/test at stores or when used.

6. MARKING AND PACKING

6.1. Marking

6.1.1. **Bar laundry soap** - Each bar of laundry soaps, whether wrapped or unwrapped, shall be marked with:

- a) The grade of the soap, that is, the words "Grade I" depending on the grade of soap;
- b) The trade name or brand name and/or the manufacturer's name; and
- c) The words "Laundry soap".
- d) Label "**Property of KPLC**".

6.1.2. **Wrapper** - Each wrapper shall be marked or labeled with the following particulars:

- a) The name of the product and/or the trade name or brand name, if any;
- b) The net mass of the soap at the time of packing and this shall not differ by more than 2 % at the time of packing the soap; and
- c) The grade of the soap in words "Grade I" depending on the grade of soap

6.1.3. **Carton** - The carton of laundry soap shall be marked or labeled with the following particulars:

- a) Name of the product, and the trade name or brand, if any;
- b) Name and address of manufacturer;
- c) Batch or code number;
- d) Net mass of the soap in accordance with the requirements of the National Weights and Measures regulations and this shall not differ by more than 2 % at the time of packing the soap.

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6.2. Packing

Laundry soap shall be packed in clean, sound and dry containers made of a material, which does not affect the product it protects from excessive loss of moisture and contamination.

7. DOCUMENTATION

7.1. The bidder shall submit its tender complete with technical documents required by Annex A (Guaranteed Technical Particulars) for tender evaluation. The technical documents to be submitted (all in English language) for tender evaluation shall include the following:

- a) Guaranteed Technical Particulars 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;
- d) Details of the manufacturer's experience;
- e) Copies of required type 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, QMS certificate and other technical documents required in the tender.
- g) Packaging details (including packaging materials).
- h) The manufacturer shall be required to also provide detailed information regarding the products:
 - Materials identification,
 - Ingredients and hazards data,
 - Physical data of the chemicals used,
 - Health hazard information,
 - Summary of risks
 - Target organs
 - First aid to various organs such as eye contacts, skin contacts, inhalation and ingestion
 - Special precautions.
 - Storage segregation
 - Special handling/storage
 - DOT class.

7.2. The supplier shall submit recommendations for use, care, storage and routine inspection/testing procedures, all in the English Language, during delivery of the laundry soap to KPLC stores.

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ANNEX A: Guaranteed Technical Particulars (to be filled and signed by the *Manufacturer* and submitted together with relevant copies of the *Manufacturer's catalogues, brochures, drawings, technical data, sales records, four customer reference letters, the manufacturer's experience and copies of complete test reports for tender evaluation, all in English Language*)

Tender No.

Clause number	Bidder's offer (indicate full details of the offered for the laundry soap)
Manufacturer's Name and address	
Country of Manufacture	
Bidder's Name and address	
1. Scope	
1.1-1.3	
2. Applicable Standards	
3. Terms & Definitions	
4. REQUIREMENTS	
4.1 Service Conditions	
4.2 Design & Construction	
4.2.1.-4.2.10	
4.3 Dimensions and weight	
4.4 Performance requirements	
4.5 Physical and chemical properties – Table 1	
Characteristics	Requirements % (m/m)
Total Fatty Matter ¹ , (% m/m) min	62
Matter insoluble in ethanol ² (% m/m), max.	3.5
Free alkali as NaOH ² (% m/m) max.	0.2
Total free fat ² (unsaponified and unsaponifiable fatty matter), max	2
Chloride content ² , as NaCl, (% m/m)	1.5
Mushing properties/stability(loss in mass due mushing on a wet surface) (g/30cm ² , maximum)	To pass test
Staining properties ³	To pass test
Ratio between (actual fatty matter content x average mass of units) and (the specified minimum fatty matter x the specified unit mass), min	1.0
4.6 Sampling	
a - d	
4.7 Quality Management System	

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Clause number	Bidder's offer (indicate full details of the offered for the laundry soap)
4.7.1 – 4.7.3	
5. TESTS AND INSPECTION	
5.1 – 5.4	
6. MARKING & PACKING	
6.1. Marking	
6.2. Packing	
6.2.1. Bar Laundry Soap	
6.2.2. Wrapper	
6.2.3 Carton	
7. DOCUMENTATION	
7.1 – 7.2	
8.0 Manufacturer's Guarantee and Warranty	
9.0 List relevant catalogues, brochures, technical data and drawings submitted to support the offer.	
10.0 List customer sales records submitted to support the offer customer reference letters.	
11.0 List test reports to be submitted with tender	
12.0 List test reports to be submitted to KPLC for approval before delivery.	
13.0 Statement of compliance to specification (indicate deviations if any & supporting documents)	

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

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