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Candle — Specification

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In order to match with technological development and to keep continuous progress in industries, standards are subject to periodic review. Users shall ascertain that they are in possession of the latest edition

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Foreword

Rwanda Standards are prepared by Technical Committees and approved by Rwanda Standards Board (RSB) Board of Directors in accordance with the procedures of RSB, in compliance with Annex 3 of the WTO/TBT agreement on the preparation, adoption and application of standards.

The main task of technical committees is to prepare national standards. Final Draft Rwanda Standards adopted by Technical committees are ratified by members of RSB Board of Directors for publication and gazettment as Rwanda Standards.

WD XXX was prepared by Technical Committee RSB/TC 67, *Consumer products*.

In the preparation of this standard, reference was made to the following standard:

IS 11359, *Wax candles — Specification*

The assistance derived from the above source is hereby acknowledged with thanks.

Committee membership

The following organizations were represented on the Technical Committee on Consumer products (RSB/TC 067) in the preparation of this standard.

AGROPY Ltd

Rwanda Environmental Management Authority (REMA)

Rwanda Inspectorate, Competition and Consumer Protection Authority (RICA)

Rwanda National Police (RNP)

Star Construction and Consultancy Ltd

Yako Ltd

University of Rwanda/College of Science and Technology (UR/CST)

Rwanda Forensic Institute (RFI)

Rwanda Standards Board (RSB) – Secretariat

Candle — Specification

1 Scope

This Draft Rwanda Standard specifies requirements, test and sampling methods for candles used for illuminating purposes. It does not cover ornamental candles.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

RS ISO 7010, *Graphical symbols — Safety colours and safety signs — Registered safety signs*

RS ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply.

3.1

candle

a source of light with one or more combustible wicks that are surrounded by a burning mass which is solid or semisolid at room temperature (20 °C to 27 °C).

3.2

wick

strip or cord of fibrous material (such as cotton) that is embedded in the center of a candle. When lit, the wick draws molten wax up to sustain a flame.

3.3

wax

substance used to make candles, typically derived from beeswax, paraffin, soy, palm, or other vegetable oils. The wax serves as the fuel for the candle flame.

3.4

burn time

total amount of time a candle can burn, typically measured in hours. It is influenced by the size of the candle, the type of wax, and the wick.

3.5

wax drip

melting solid wax into liquid wax. The wax drip percentage indicates wastage; a lower percentage signifies a higher-quality candle.

4 Requirements

4.1 General requirements

The candle shall be:

- a) clean with a uniform finish;
- b) white or coloured, solid;
- c) free from dirt and foreign matter;
- d) free from fracture (breaks) and distortions (warps, sags, runs, two or more fused together);
- e) straight, cylindrical with a properly finished shoulder and complete flat base without recess;
- f) wick length shall be properly centred and shall extend the entire length of the candle. It shall not be visible except for minimum 5.0 mm of the wick that shall protrude beyond the tip of the candle;
- g) candle shall burn uniformly with an even flame. The flame shall consume the candle and wick, without dripping, objectionable odour, and without the necessity of trimming the wick;
- h) burning time of the candle shall be determined at an ambient temperature of $29 \pm 2^\circ\text{C}$ under conditions free from draughts but with access to air;
- i) wicks used in the candle shall be made of fine cotton thread free from cotton seed skin and kinks; and
- j) all materials used in the candle, including wax, wick, color and fragrances, must be non-toxic and safe for indoor use

4.2 Specific requirements

Candle shall comply with the specific requirements given in Table 1 when tested in accordance with the test methods specified therein.

Table 1 — Specific requirements of candle

S/N	Parameter		Requirement	Tolerance	Test method
i.	Length (mm)		150	±5	Annex A
			220		
ii.	Diameter (mm)		10	±0.5	Vernier calliper
			20	±1	
iii.	Burning time (hours), Min.	For diameter of 10	2.5	-	Annex B
		For diameter of 20	4		
iv.	Mass (g), Min.	For diameter of 10	20	±0.1	Balance
		For diameter of 20	30		

5 Packaging

The candles shall be packed in units wrapped in well-sealed material that will not adversely affect the quality of the product during transportation and storage.

6 Labelling

Each unit and each box shall bear the following information in prominent, legible and indelible marking:

- a) both the manufacturer's name and brand name;
- b) material composition (e.g. type of wax, fragrance);
- c) number of candles;
- d) net weight and dimensions;
- e) batch number;
- f) color;
- g) burn time;
- h) country of origin; and
- i) safety instructions.

7 Sampling

Sampling shall be done in accordance with RS ISO 2859-1

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Annex A
(normative)

Measurement of candle dimensions

Measure the distance from the base to the shoulder of the candle using steel ruler. Measure three candles, and calculate the average length of three readings.

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Annex B (normative)

Determination of burning time and wax drip

B.1 Procedure

B.1.1 Take four candles from the test sample selected and store them in a cool place for at least 24 h before evaluation.

B.1.2 Wipe the candles with a soft cloth to remove any loose wax particles. Ensure that $5.0 \text{ mm} \pm 2.5 \text{ mm}$ of the wick is exposed at the tip of the candle, but take care that no contact is made between the wick and the bare hands to prevent contamination of the wick.

B.1.3 Determine the mass of each candle and calculate the average mass of the four candles.

B.1.4 Determine the mass of each of four clean flat metal plates.

B.1.5 Position each plate at least 150 mm away from any wall, edge of table or other plates, in a draught-free room at a temperature of $22 \text{ }^\circ\text{C} \pm 2.5 \text{ }^\circ\text{C}$.

B.1.6 Light each candle and without delay, position the lit candle in the centre of plate by means of a small amount of molten wax produced by the candle, in such a manner that the wick is completely vertical.

B.1.7 Record the burning time of each candle.

B.1.8 Calculate the average burning time of the four candles.

B.1.9 Determine the mass of each of the four plates with the wax that dripped during the burning test.

B.1.10 Calculate the wax dripped for each candle by subtracting the mass of each of the four clean plates determined in B.1.4, from the mass of each of the four plates with the dripped wax, determined in B.1.9. Then calculate the average mass of wax dripped for the four candles.

B.2 Calculation

$$\text{Wax drip, \%} = \frac{M_1}{M_2} \times 100$$

Where;

M_1 the average mass, in grams of wax dripped, and

M_2 the average mass, in grams of a candle.

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