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DRAFT EAST AFRICAN STANDARD

Glass containers — Specification — Part 2: Glass jars

EAST AFRICAN COMMUNITY

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Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the Principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 066, *Packaging*.

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Glass containers — Specification — Part 2: Glass jars

1 Scope

This Draft East African Standard specifies the requirements, methods of sampling and test for glass jar used in packaging.

This standard does not cover glass containers used in pharmaceutical industry and laboratory.

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.

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

ISO 7348, *Glass containers — Manufacture — Vocabulary*

ISO 7458, *Glass containers — Internal pressure resistance — Test methods*

ISO 7459, *Glass containers — Thermal shock resistance and thermal shock endurance — Test methods*

ISO 8106, *Glass containers — Determination of capacity by gravimetric method — Test method*

ISO 9008, *Glass bottles — Verticality — Test method*

3 Terms and definitions

For the purposes of this document, the following terms and definitions and those in ISO 7348 shall apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1 filling level

distance from the top of the neck finish to the centre of the meniscus measured on the centre line of the glass jar

3.2 internal pressure resistance

ability of the glass jar to withstand internal pressure without breaking

3.3
vacuity
 free space left above the liquid in a sealed container. It is expressed as a percentage of the nominal volume of the liquid

3.4
verticality
 horizontal deviation of the centre of the glass jar finish from a vertical line through the centre of the base

3.5
thermal shock resistance
 actual temperature change, measured in degrees Celsius, which a container can withstand without breaking.

3.6
glass jar
 wide mouthed cylindrical container made of glass

4 Requirements

4.1 General requirements

4.1.1.1 The glass jars shall be transparent. They shall also be free from cracks and shall be reasonably free from stones, blisters, bubbles, cords, mould marks, chill marks and other visual defects. They shall be well annealed.

4.1.1.2 The jars shall be of the pattern as agreed t between the purchaser and the supplier. The glass jar design shall be such that it complies with the requirement of this Standard.
4.1.1.3 The jars shall be well formed with the distribution of glass all over the walls and the base as uniform as possible, avoiding any wedge bottom. The glass jars shall be symmetrical around the axis and the base shall rest on a plane surface without rocking.

4.1.1.4 The glass jar shall be uniformly smooth, evenly finished and have tamper-proof neck when complete with a lid

4.2 Specific requirements

5.2.1 Nominal capacity

When tested in accordance to ISO 8106 the nominal capacity at filling level shall be as specified in Table 1

Table 1 — Nominal capacity (ml) mean values

Nominal capacity ml		Tolerance ml, ±	Nominal capacity ml		Tolerance ml, ±
Over	Up to and including		Over	Up to and including	
-	100	2.7	450	500	6.0
100	125	3.0	500	600	6.5
125	150	3.3	600	700	7.1
150	175	3.5	700	800	7.6
175	200	3.8	800	900	8.0
200	250	4.2	900	1 000	8.4
250	300	4.6	1 000	1 150	11.5
300	350	5.0	1 150	1 250	12.5
350	400	5.3	1 250	1 500	15.0
400	450	5.7	-	-	-

5.2.2 Dimensions

5.2.2.1 Finished diameter of the Glass Jar

The jar dimension shall comply with the requirements of this standard when measured by means of go, no-go gauge, using a ring gauge for the maximum diameter, and a gap gauge with a 38 mm wide anvil for the minimum diameter.

5.2.2.2 Thickness of the wall of the glass Jar

The wall thickness of the glass jar shall be same throughout the circumference at any given level with a tolerance of $\pm 33\%$ upto thickness of 2 mm and $\pm 25\%$ for thickness above 2 mm upto 3 mm, and $\pm 20\%$ for thickness above 3mm and said level excluding embossing if any when tested using Vernier caliper.

5.2.3 The glass jars shall comply with specific requirements given in Table 2 when tested in accordance with the test methods specified therein.

Table 2 — Specific requirements for glass jars

S/N	Parameter	Requirement	Test method
i.	Minimum internal pressure resistance, bar sustained for 60 s	7 ^a	ISO 7458
ii.	Design vacuity, %, min.	3.5	ISO 8106
iii.	Verticality ^b , mm, max.	3	ISO 9008

^a 1 bar = 14.5 lbf/in²
 1 bar = 10⁵ Pa
 1 bar = 1.019 Kg/cm²

^a NOTE Incase is used in modified atmosphere for packaging.

^b This deviation is equal to half the diameter of a circle described by the centre of the finish when the glass jar as it rotates around the vertical axis through the centre of the base.

5.2.4 Brimful capacity

When tested in accordance with ISO 8106, the glass jars shall comply with the declared volume.

5.2.5 Thermal shock resistance

When tested in accordance with ISO 7459, the glass jar shall resist, without breakage, the thermal shock imposed by a fall in temperature of 43 °C.

5.2.6 Resistance to acidity

The jar surface shall show neither change in colour nor loss of gloss after 24 h in 2.5 % solution by volume of phosphoric acid at temperature range of 18 °C – 35 °C.

5.2.7 Resistance to alkalinity

The jar surfaces shall not show any appreciable loss of gloss when a jar is submerged in the test solution at 90 °C \pm 2 °C for a continuous period of 8 h. This also applies to any applied colour labeling on the jars.

Composition of test solution:

Sodium hydroxide (NaOH, Pellets)	9 % by mass
Trisodium phosphate (Na ₃ PO ₄ 12H ₂ O)	1 % by mass
Distilled water	90 % by mass

5.2.8 Resistance to humidity

The jar surface shall further not darken when subjected to an atmosphere of 100 % relative humidity, saturated with hydrogen sulphide at the prevailing room temperature, for a continuous period of 24 h.

5.2.6 Weights and measures

The volume and fill of the glass jars shall comply with weights and measures regulations in the respective Partner States.

6 Packaging

The glass jars shall be packaged in a manner that prevents damage, contamination during handling, storage and transportation.

7 Labelling

7.1 Labelling on the glass jars

The glass jars shall be embossed on the insweep (heel) or base with the following information:

- a) manufacturer's name and/or registered trade mark;
- b) cavity or mould number;
- c) year of manufacture; and
- d) brimful capacity.

7.2 Labelling on bulk package

The bulk package shall be legibly and indelibly marked with the following information:

- a) manufacturer's name, address and /or registered trade mark;
- b) batch number;
- c) number of glass jars;
- d) handling instructions;
- e) capacity of the glass jar;
- f) name of the product; and
- g) date of manufacture.

8 Sampling

Sampling of glass jars shall be done in accordance with ISO 2859-1.

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Bibliography

KS 2387:2019, *Glass Jars — Specification*

IS 9781, *Glass jars for jams, jellies and marmalades — Specification*

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