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ICS 83.080.01

EAST AFRICAN STANDARD

Plastic bucket — Specification

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. XXXXXX.

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 072, *Plastics and related products*

Plastic bucket — Specification

1 Scope

This Draft East African Standard specifies requirements, sampling and test methods for plastic buckets for general purpose use.

This standard does not apply to plastic buckets intended for food handling.

2 Normative references:

There are no normative references in this document.

3 Terms and definitions

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

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

— ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

nominal capacity

volume of liquid which a container should hold when filled to the specified filling level at the specified temperature

3.2

brimful capacity

volume of water required to fill a container, placed on a flat, horizontal surface

3.3

sprue

excess material protruding from the outer base of the bucket where the mould was channelled

3.4

reversion

reduction on length expressed as a percentage of the initial length of the specimen

3.5

splitting

response of the test specimen to heat evidenced by breaking into pieces, in whole or in part

3.6

distortion

any change in the shape or original dimensions of a test piece, occurring during heat treatment

4 Requirements

4.1 General requirements

4.1.1 Material

Buckets shall be made from suitable plastic materials.

4.1.2 Finishing

The plastic bucket shall have a smooth finish in appearance and feel, without any blemishes, moulding flash and sprue.

4.1.3 Handle

4.1.3.1 The plastic bucket handle shall be made of suitable rigid and corrosion resistant material.

4.1.3.2 The plastic bucket handle shall be so constructed and attached that it shall provide adequate grip and shall not be injurious to the user.

4.1.4 Workmanship

4.1.4.1 To protect the base of the plastic bucket from abrasion, it shall be so supported that at 90°, when filled with water at 60 °C, it's under surface excluding the ribs, shall be at least 5 mm above the plane surface on which it is placed.

4.1.4.2 For buckets with lids, the lid shall be fitting and shall be of the same material as the bucket. For plastic buckets with no lids this requirement is not applicable.

4.1.4.3 The rim shall be reinforced to prevent ovaling

4.1.4.4 The walls of plastic bucket shall meet the bottom of the bucket with a curved surface to prevent dirt accumulation and facilitate cleaning.

4.1.5 Mass

The minimum mass of bucket shall be as agreed to, by the purchaser and the supplier

4.2 Specific requirements

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

Table 1 — Specific requirements for plastic bucket

Characteristic	Requirement	Test method
Reversion, %, max.	5	Annex A
Splitting, mm, max.	2	Annex B

4.3 Distortion test

The plastic bucket shall comply with the following requirements when tested in accordance with Annex C:

- a) The maximum increase in diameter of the top, at right angles to the handle shall be 5 % of initial diameter; and

- b) The maximum increase in depth from the rim to the bottom of plastic bucket shall be 3 % of initial depth.

4.4 Drop test

The plastic bucket filled with water to its nominal capacity shall withstand three falls when dropped vertically on a flat concrete surface from a height of 1.5 m.

4.5 Overload test

When tested in accordance with Annex E, no part of the plastic bucket or handle shall break, and the handle shall not become detached from the bucket.

4.6 Brimful capacity

When tested in accordance with Annex D, the brimful capacity shall be 5 % greater than the nominal capacity.

5 Packaging

The plastic bucket shall be packed as agreed to between the purchaser and the supplier.

6 Marking and labelling

6.1 Marking on plastic bucket

The plastic bucket shall be legibly and indelibly marked in English and/or any other official language (French, Kiswahili, etc.) used in the importing East African Partner State with the following information.

- a) nominal capacity in litres;
- b) code of resin identification and symbol for recycling in accordance with DEAS 1086: 2021 (Code of resin identification);
- c) name of the manufacturer and/or trademark;
- d) batch or code number; and
- e) country of origin

6.2 Labelling of bulk package

6.2.1 The bulk package shall contain plastic buckets of the same size.

6.2.2 The bulk package shall be legibly and indelibly labelled in English and/or any other official language (French, Kiswahili, etc.) used in the importing East African Partner State with the following information:

- a) name and physical address of manufacturer and/or registered trademark;
- b) name of the product as, "Plastic buckets";
- c) capacity of the plastic buckets in litres of water, for example, 5 L, 10 L, 15 L;
- d) declaration of the number of plastic buckets in the bulk package;

- e) batch or code number;
- f) instruction for storage and disposal of the bulk packaging material; and
- g) country of origin.

7 Sampling

Representative samples of plastic buckets shall be drawn and conformity of the material to the requirements of this standard shall be decided according to the procedure given in Annex F.

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Annex A (normative)

Reversion test

A.1 Specimen

A specimen of dimension 50 mm x 2.5 mm, is cut from the side of the bucket such that its main axis is radial to the sprue. Five specimens from separate position of the side are examined in each case.

A.2 Procedure

The specimens are measured accurately and then immersed in boiling water for 30 min. On removal, they are allowed to cool for 1 h, after which the length is measured again to the nearest 0.5 mm.

Annex B
(Normative)

Splitting test

B.1 Specimen

The specimen consists of a disk of 75 mm diameter with the sprue at its centre, cut from the base of the bucket. A slit 38 mm \pm 1.5 mm long is made in the specimen so that its mid-point lies on the centre of the circular specimen and extends through its thickness. This slit may conveniently be cut out with a single edged razor blade.

B.2 Procedure

The specimen is immersed in boiling water for 30 min. On removal from the water bath, the specimen is allowed to cool with no applied constraint. The maximum distance between the edges of the slit is measured and recorded.

Annex C (Normative)

Distortion test

C.1 Outline of the method

The distortion test is carried out by hanging a plastic bucket filled with water at 60 °C and then determining the increase in diameter and depth of the bucket.

C.2 Procedure

C.2.1 Suspend the plastic bucket by its handle at the centre from a double hook, the arms of which are approximately 75 mm apart (see Figure C.1). For buckets with side handles, they shall be suspended between two horizontal parallel supports, with handles resting perpendicular to the supports.

C.2.2 Measure the diameter, d , of the top at right angles to handle (including spout, if any) and depth, h , from the rim to the bottom of the bucket.

C.2.3 Pour water at 60 °C until it is filled to a level of 25 mm from the rim. After 5 min, measure ' d ' and ' h ', and report the increase in dimensions as percentage of the initial dimensions.

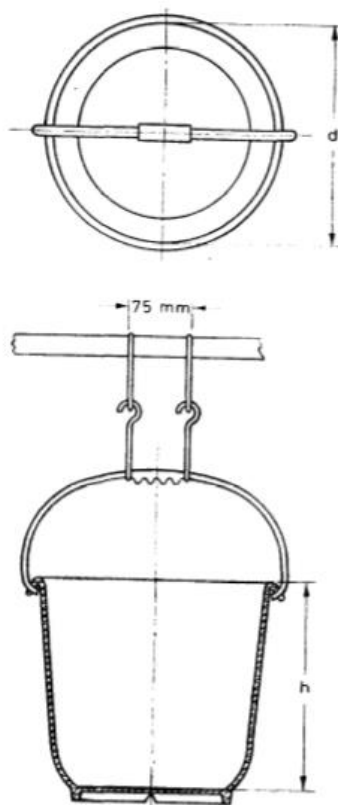


Figure C.1 — Apparatus for the determination of distortion

Annex D (normative)

Test for brimful capacity

D.1 Apparatus

D.1.1 Rigid transparent plastic disc with a slot (see Figure D.1) big enough to completely cover the neck of the bucket

D.1.2 Weighing balance to determine the mass of the container to accuracy of 1 g

D.2 Procedure

D.2.1 Weigh the plastic bucket and the rigid transparent plastic disc to an accuracy of 1 g.

D.2.2. Fill the plastic bucket with water to within approximately 3 mm of brim. The water used should be at ambient temperature or in case of dispute, at $27\text{ °C} \pm 2\text{ °C}$.

D.2.3 Place the rigid transparent plastic disc on the neck face and top up by carefully pouring water through the slot until the water is seen just contacting the underside of the disc.

D.2.4 Weigh the filled plastic bucket, together with the rigid transparent plastic disc.

D.2.5 The difference in weightings is the mass of the water recorded in grams. The results shall be expressed to the nearest millilitres.

D.3 Result

The mass of the water in grams or the volume of water measured is numerically equal to the brimful capacity of the container in millilitres.

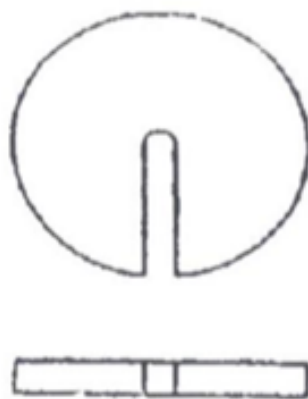


Figure D.1 — Transparent plastic disc

Annex E **(normative)**

Overload test

E.1 Outline of the method

Overload test is carried out by hanging a bucket filled with a specified load for a specified period and then examining for any break or detachment of the handle.

E.2 Procedure

E.2.1 Suspend the plastic bucket as prescribed in C.2.1.

E.2.2 Pour into the bucket lead shots or any other suitable material of a mass equal to twice that of the water required to fill the bucket.

E.2.3 Examine the bucket or handle for any breakage or detachment of the handle from the bucket at either side after 30 min.

Annex F (normative)

Sampling Criteria

F.1 Scale of sampling

F.1.1 In any consignment, all the buckets of the same size, same type and belonging to the same batch of manufacture shall be grouped together to constitute a lot.

F.1.2 For ascertaining conformity of the material to the requirements of this standard, samples shall be tested from each lot separately.

F.1.3 The number of buckets to be sampled from a lot shall depend upon the size of the lot and shall be in accordance with Table F.1.

Table F.1 — Scale of sampling and permissible number of defectives

Lot size	For finishing, handle, construction and brimful capacity		Number of buckets to be selected for distortion, overload test	Subsample size for reversion, splitting and drop tests
	Number of buckets to be selected	Permissible number of defectives		
≤ 50	5	0	3	3
51 to 100	8	0	5	3
101 to 150	13	1	5	3
151 to 300	20	2	8	3
301 to 500	32	3	8	3
501 to 1000	50	5	13	4
≥ 1001	80	7	13	4

F.2 Number of tests and criteria for conformity

F.2.1 The buckets selected shall be examined for finishing (see 4.1.2), handle (see 4.1.3) and workmanship (see 4.1.4). A bucket failing to meet any one or more of these requirements shall be considered as defective. The lot shall be considered as conforming to the requirements of these characteristics, if the number of defective buckets in the sample is less than or equal to the corresponding number given in column 3 of Table F.1.

F.2.2 The lot having been found satisfactory according to F.2.1 shall be subjected to distortion test (see Annex C) and overload test (Annex E). For this purpose, the number of buckets given in column 4 of Table F.1 shall be selected at random from the lot. These may be selected from those already examined according to F.2.1 and found satisfactory. A bucket failing in any of these tests shall be considered as defective. The lot shall be considered to have passed these tests if no defective bucket is found in the sample.

G.2.3 The lot having been found satisfactory according to F.2.1 and F.2.2 shall finally be subjected to brimful, drop, reversion and splitting tests.

Bibliography

- [1] IS 2530:1968, *Methods of test for polyethylene moulding materials and polyethylene compounds*
- [2] IS 3730:1988, *Specification for high density polyethylene bucket*
- [3] TZS 1877–1:2016, *Plastic container — Specification — Part 1: Bucket*
- [4] US 2297:2021, *Plastic bucket — Specification*

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