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# **DRAFT EAST AFRICAN STANDARD**

Watering can — Specification

# **EAST AFRICAN COMMUNITY**

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#### 0 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 042, *Production and general engineering*.

Attention is drawn to the possibility that some of the elements of this document may be subject of patent rights. EAC shall not be held responsible for identifying any or all such patent rights.

## Watering cans — Specification

#### 1 Scope

This Draft East African Standard specifies requirements, test methods and sampling plan of portable cans used for watering seed bed, gardens plants, potted plants and/or other applications.

#### 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 4998, Steel sheet, zinc-coated and zinc-iron alloy-coated by the continuous hot-dip process, of structural quality

ISO 8353, Steel sheet, zinc-aluminium-magnesium alloy-coated by the continuous hot-dip process, of commercial, drawing and structural qualities

ISO 9364, Steel sheet, 55 % aluminium-zinc alloy-coated by the continuous hot-dip process, of commercial, drawing and structural qualities

ISO 16143-1, Stainless steels for general purposes — Part 1: Corrosion-resistant flat products

ISO 24153, Random sampling and randomization procedures

EAS 468, Pre painted metal coated steel sheets and coils

EAS 1086, Plastics — Codes for resin identification on plastic containers

#### 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:

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

#### 3.1

#### watering can

a portable water container with a long spout and a detachable perforated spray head/rose, used for watering plants and/or other applications.

#### 3.2

# spray head (shower) rose attachment

a perforated outlet attached to a spout of watering can, through which the flow of water is split evenly.

## 3.3

#### spout

a tube or lip projecting from a container, through which liquid can be poured

## 4 Types of watering cans

## 4.1 Watering cans based on production material

#### 4.1.1 Plastic watering cans

Lightweight and durable, plastic watering cans are easy to carry and won't rust. Look for ones made from UV-stabilised polypropylene, which can withstand prolonged exposure to sunlight without fading or degrading.

#### 4.1.2 Metal watering cans

While metal cans are often heavier than their plastic counterparts, they offer superior durability and a more traditional look. Choose cans made from coated steel (zinc, aluminium-zinc, aluminium-zinc-magnesium, prepainted or powder coated steel), stainless steel, copper or aluminium for corrosion resistance.

#### 4.2 Watering cans based in design shapes and specific purposes

#### 4.2.1 Traditional watering cans

These are the classic metal or plastic cans with a spout and handle. They come in different capacities, ranging from small indoor cans to large outdoor ones. Heavier metal cans are particularly useful for outdoor use, as they are less likely to be blown away on windy days.

#### 4.2.2 Long-reach watering cans

Ideal for reaching hanging baskets or plants in the back of borders, long-reach watering cans have an extended spout that allows for precise watering without having to stretch or bend.

#### 4.2.3 Rose watering cans

Featuring a detachable rose attachment at the spout, these cans provide a gentle, even spray, making them perfect for watering delicate seedlings or young plants.

#### 4.2.4 Two-in-one watering cans

Some watering cans come with interchangeable spouts, allowing you to switch between a pouring spout and a rose attachment as needed.

#### 5 Requirements

#### 5.1 Material

- **5.1.1** Watering cans shall be made of either the following materials;
  - corrosion resistant metals such aluminium, stainless steel, copper, zinc coated (galvanized) steel, aluminium-zinc coated steel, aluminium-zinc-magnesium coated steel, pre-painted steel or powder coated steel for protection against rusting.

- ii) durable and robust plastics such as high-density polyethylene (HDPE), Fibre-reinforced plastic/polymer (FRP), polyvinyl chloride (PVC) and ultraviolet radiation UV-stabilised polypropylene to withstand prolonged exposure to sunlight without fading or degrading.
- iii) Ceramic or glass designs for additional decorative value. They are less physically strong and may be prone to damage, making them especially suitable for indoor use.
- **5.1.2** Materials like wood can be used for handles. Lightweight plastic watering cans offer convenience, and recycled plastics meet the growing need for sustainable alternatives.
- **5.1.3** For stainless steel watering cans the stainless-steel grades shall be according to ISO 16143-1. Soldering wire used in the fabrication of watering cans shall have a minimum of tin content of 35 percent. The thickness of steel sheets used for various parts of watering can shall be as shown in Table 1.

| S/No. | Part of watering can | Minimum thickness (mm) |
|-------|----------------------|------------------------|
| 1     | Body and top         | 0.63                   |
| 2     | Bottom               | 0.63                   |
| 3     | Handle               | 1.0                    |
| 4     | Spout and shower     | 0.63                   |
| 5     | Bottom ring          | 0.63                   |

Table 1: Thickness of steel sheets

#### 5.1.4 Coating

- **5.1.4.1** Zinc coated (galvanized) steel watering cans shall have a minimum coating class of Z100 according to ISO 4998.
- **5.1.4.2** Aluminium-zinc coated steel watering cans shall have a minimum coating class of AZ90 according to ISO 9364.
- **5.1.4.3** Aluminium-zinc-magnesium coated steel watering cans shall have a minimum coating class of ZM60 according to ISO 8353.
- **5.1.4.4** Pre-painted steel watering cans shall be coated according to EAS 468.

#### 5.2 Shapes, dimensions and capacities

General shapes, dimensions and capacities of watering cans are as given in Figure 1 and Table 2.

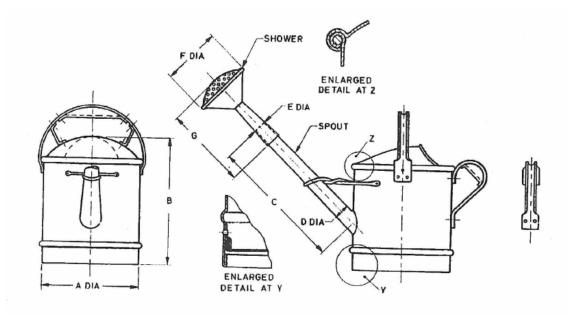


Figure 1: Watering can

Table 2: Dimensions and capacities of watering cans

All dimensions in millimetres

| Diameter of body | Overall<br>height of<br>body | Length of spout |    | eter of<br>out | Shower diameter | Overall length of shower | Angle of<br>spout<br>with<br>body | Nominal capacity (litres) |
|------------------|------------------------------|-----------------|----|----------------|-----------------|--------------------------|-----------------------------------|---------------------------|
| Α                | В                            | С               | D* | Е              | F               | G                        |                                   |                           |
| 150              | 200                          | 210             | 35 | 20             | 90              | 130                      | 45°                               | 5                         |
| 215              | 250                          | 260             | 45 | 25             | 110             | 150                      | 45°                               | 8                         |
| 250              | 300                          | 320             | 50 | 30             | 130             | 150                      | 45°                               | 12                        |

<sup>\*</sup>The dimensions shall be measured at a distance of 10 mm from the inner edge.

Note 1: Watering cans with capacities of 3 litres, 16 litres and 20 litres can be produced for other applications.

**Note 2:** Other shapes, dimensions and capacities not exceeding 20 litres of watering cans may be produced according to the agreement between producer and purchaser.

#### 5.3 Design and manufacture

#### 5.3.1 Design

Watering cans shall have an ergonomic design of the handle and neck. The opening may be used for storing the spray head, so it doesn't get lost. It may contain replacement spray head (roses) and elbows. Purely functional watering cans can be relatively basic in design. Ergonomic handles and extra-long spouts can offer additional convenience. More decorative cans can vary in terms of shapes, decorations and combinations of materials. Plant misters often come in dainty, romantic designs and more delicate materials like glass or copper.

#### 5.3.2 Manufacture

- 5.3.2.1 The body of the watering can shall be made from one piece, joined together by lock joint and soldered. The width of the seam shall be not less than 10 mm for all sizes of the same. The top and bottom shall be joined to the body by lock joint and then soldered or be as integral part of the watering can.
- 5.3.2.2 Watering can shall be designed with handle(s), allowing it to be lifted upright and tilted effectively when watering. The handles shall be fluted or tubular. Handles shall be securely riveted, welded to the body or be as integral part of the watering can.
- 5.3.2.3 The spout shall be joined to the body by riveting and soldering and the shower shall fit over the spout. The spout shall be suitably supported by wire or strip.
- 5.3.2.4 The bottom ring shall be riveted to the body with at least two rivets and with a tapping of at least 10 mm. The end of the bottom ring shall be folded inside and the width of the inside fold shall be not less than 6 mm.

#### 5.4 Finish

All parts of the watering can shall have a smooth finish with all sharp edges rounded off. The holes in the showers shall be uniform in size, equally spaced on circles and smoothly finished. All soldered joints shall be aluminium painted.

#### 5.5 Performance

- 5.5.1 Watering cans shall show no signs of leakage when tested by the method prescribed in 5.5.2 and 5.5.3.
- **5.5.2** Fill the watering can with water to its brim and keep it for four hours. It shall not show any sign of leakage during and after this period.
- **5.5.3** Push the watering can with its top upwards in a tank full of water up to its brim. There shall be no seepage of water from the sides or bottom.

## 6 Packaging and marking

- **6.1** The watering cans shall be packaged in such a manner that they are not damaged during transportation and storage.
- **6.2** Each watering can shall have the following information, legibly and indelibly, in letters and numerals of height at least 5 mm:
  - a) manufacturer's name or registered trademark;
  - b) type and/or grade of material;
  - c) coating/paint class (if applicable);
  - d) batch number;
  - e) water capacity; and
  - f) country of origin.
- **6.3** For plastic watering cans material identification shall be done in accordance with EAS 1086.

## 7 Inspection and test methods

#### 7.1 Inspection

Watering cans shall be inspected against the requirements of clause 5.2, 5.3, 5.4, 5.5 and 6.

#### 7.2 Test methods

Watering cans shall be tested according to clause 9.

When required, the materials can be tested in accordance to clause 5.

## 8 Sampling

- **8.1** The sample shall be selected at random from the lot according to ISO 24153. The samples from each lot shall be tested for ascertaining the conformity of the lot to the requirements of the relevant product specification.
- **8.2** Watering cans shall be sampled for testing in accordance to Table 3.

Table 3: Scale of sampling and permissible number of defectives

| Lot size, N   | For visual and dimensional tests |                                  | For other tests          |                                  |  |
|---------------|----------------------------------|----------------------------------|--------------------------|----------------------------------|--|
|               | Sample<br>size, <i>n</i>         | Permissible number of defectives | Sample<br>size, <i>n</i> | Permissible number of defectives |  |
| Up to 10      | 1                                | 0                                | 1                        | 0                                |  |
| 11 to 25      | 2                                | 0                                | 2                        | 0                                |  |
| 26 to 50      | 3                                | 0                                | 2                        | 0                                |  |
| 51 to 100     | 5                                | 0                                | 2                        | 0                                |  |
| 101 to 300    | 13                               | 1                                | 3                        | 0                                |  |
| 301 to 500    | 32                               | 3                                | 5                        | 0                                |  |
| 501 to 1000   | 50                               | 5                                | 8                        | 1                                |  |
| 1001 to above | 80                               | 7                                | 13                       | 1                                |  |

#### Annex A

(Informative)

## Selection criteria

- **A.1** When selecting a watering can, consider the size of your garden and the types of plants you'll be watering.
- A.2 For small indoor plants or container gardens, a watering can with 3 litres, 5 litres or 8 litres may suffice.
- **A.3** For larger outdoor gardens or raised beds, opt for a larger capacity can, such as 12 litres, 16 litres or 20 litres in order to minimise refills and reduce watering time.

#### Annex B

(Informative)

## User guidance on handling and maintenance

- **B.1** Always fill the can with clean, fresh water to prevent the build-up of algae or bacteria.
- **B.2** After each use, rinse the can thoroughly with water and allow it to air dry to prevent mould or mildew growth.
- **B.3** Check for any signs of damage, such as cracks or leaks, and repair or replace the can as needed.

## **Bibliography**

[1] KS 1324:1997, Specification for watering cans