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Toilet Brush — Specification



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Foreword

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The committee responsible for this document is Technical Committee UNBS/TC 5, Chemicals and Environment, Subcommittee SC 3, *Plastics and related products*.

Toilet Brush — Specification

1 Scope

This Draft Uganda Standard specifies the requirements, methods of sampling and test for brush used for scrubbing and cleaning toilet bowls and urinal trenches

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 plastic

synthetic material made from a wide range of organic polymers such as polyethylene, Polyvinyl chloride (PVC), nylon, high-density polyethylene (HDPE), polyethylene terephthalate (PET), Phenolic resin, Polypropylene, and ultra-high-molecular-weight polyethylene (UHMWPE, UHMW)

3.2 wood

hard fibrous material that forms the main substance of the trunk or branches of a tree or shrub

3.3 block

part of the toilet brush where the tufts are anchored

3.4 lot

unit of production that, is far as practicable, consists of production units of a single type, class, size and composition, manufactured under the same conditions, and at substantially the same time

3.5 tuft

bunch or cluster of bristles/monofilaments, usually flexible, attached or fixed closely together at the base and loose at the upper ends

3.6 pith

a tissue located in the centre of the stem of vascular plants which is composed of soft, spongy parenchyma cells

3.7 head

part of the brush comprising of the block and tufts

3.7**bristle length**

length of the monofilament that protrudes from the block

3.8**handle length**

part of handle that protrudes from the block

4 Requirements**4.1 General requirements**

4.1.1 The toilet brush shall have a smooth finish and all the components shall be free from imperfections and defects, which might impair its serviceability

4.1.2 Surfaces shall be free from sharp edges or corners that may cause injury to the user,

4.1.3 The head and handle may be suitably coloured.

4.1.4 The brush shall be supplied with a holder or bowl and the brush head shall fit completely in the bowl.

4.1.5 Block and handle

4.1.5.1 Material used for making the block and handle shall be made of plastic, metal, wood or any suitable material.

4.1.5.2 Wooden handle and block, shall be free from brashness, any kind of biological or non-biological deterioration, insect attack, centre heart (pith), knots (except pin knots), cracks, warp or any other defect which may reduce the life of the brush or affect its utility.

4.1.5.3 Plastic handle and block shall be made of plastic which does not deflect while cleaning, and the handle shall fit firmly in the block

4.1.5.4 The handles shall be designed as to provide a firm and stable grip under normal conditions of use.

4.1.6 Bristles

4.1.6.1. Bristles shall be stiff: made of animal hair, metal, plastic (synthetic), natural material such as coconut fibre, sisal fibre or any other suitable material.

4.1.6.2 Suitable adhesive, wire, nails, or staples shall be used to fix the bristles in the tuft holes. wire, nails or staples used shall be corrosion resistant.

4.1.6.3 Each tuft shall contain bristles of uniform length, diameter, quantity and of the same synthetic material.

4.2 Specific requirements

4.2.1 Toilet brush shall conform to the requirements given in Table 1 when tested in accordance with the test methods specified therein.

Table1 — Specific requirements for toilet brush

Characteristic	Requirement		Test method
	wooden	plastic	
Moisture content,%, max	15	-	Annex A
Tuft anchorage	Neither a tuft nor its individual bristle shall dislodge.		Annex B

4.2.2 When metal is used as any of the components of the brush it shall be corrosion-resistant or shall be protected against corrosion, thus when tested in accordance with Annex C, the surfaces shall show no sign of corrosion

5 Dimensions

Toilet brush shall conform to the minimum dimensions given in Table 2

Table2 — Table for minimum dimensions

SN	Parameter	Quantity
i.	Bristle diameter (mm)	0.35
ii.	Bristle length (mm)	29.0
iii.	Handle length (mm)	300.0
iv.	Handle strength (N)	40.0
v.	Number of bristles per brush	2000
vi.	Pull Strength for 1 min (N)	50.0

6 Test methods for dimensions

6.1 Bristle diameter

The bristle diameter shall be measured by a micrometer screw gauge or a vernier calliper or any instrument that can measure diameter to the nearest 0.01 mm, measure the diameter of six bristles to the nearest 0.01 mm. Select the six bristles from six random tufts from the same brush head, then calculate the average bristle diameter

6.2 Bristle length

The bristle length shall be measured using a vernier calliper, measure the length of six bristles to the nearest 0.01 mm. Select the six bristles from six random tufts from the same brush head. Calculate the average bristle length.

6.3 Handle length

The handle length shall be measured using a graduated metre ruler /tape measure with a scale of 1 mm or any other suitable instrument, capable of measuring length to the nearest 1 mm.

6.4 Handle strength

6.4.1 Apparatus

6.4.1.1 A means of supporting the head of the brush with the handle horizontal

6.4.1.2 A means of applying a force perpendicular to the handle

6.4.2 Test Specimen

Toilet brushes used in the sampling plan

6.4.3 Procedure

6.4.3.1 Horizontally support the head of the toilet brush under test such that the handle cantilevers

6.4.3.2 Apply a perpendicular force to the handle at a distance of 250mm from the block-handle joint until the handle detaches from the head, record the force at which this happens.

7 Packaging

The brush head and the bowl shall be neatly and firmly secured with polythene

8 Labelling

8.1 The brush or its bowl shall be indelibly marked or stamped with the following;

- a) name/trademark or address of manufacturer;
- b) batch number;
- c) code of resin if plastic material is used

8.2 The package shall be legibly marked or stamped with the following;

- 1) name of product "toilet brush";
- 2) country of origin;
- 3) date of manufacture;

9 Sampling

Sampling shall be done in accordance with Annex D

Annex A (normative)

Determination of Moisture Content for wooden brushes

A.1 Test Specimen

The entire block used in brush may form the test specimen for the determination of moisture content or a piece cut from it. When for any reason, additional determination of moisture content is required, separate samples shall be prepared from the sample material used in preparing the test specimens. Smaller specimens may be used when deemed necessary. The test shall be carried out immediately after cutting the specimen

A.2 Procedure

Weigh accurately each test specimen and dry it in a ventilated oven at a temperature of $105\text{ °C} \pm 2\text{ °C}$ until the mass becomes constant between two successive weighing made at an interval of not less than one hour

A.3 Calculation

$$\% \text{ moisture content} = \frac{W_1 - W_0}{W_0} \times 100$$

Where:

W_1 initial mass in grams of test specimen, and

W_0 oven-dry mass in grams of the test specimen

Annex B (normative)

Determination of Pull Strength

B.1 General

A simple instrument as shown in Fig. B1 can be used for testing the pull strength. This unit is suitable for mounting on wall. It consists of dial force gauge /weighing scale (0-10 kg) operating on spring (A) mounted on a plate (B). A tubular tuft holder (C) is hung on the hook of dial gauge. A clamp for holding brush (E) is provided which is movable downward and upward with a screw (F). The dial force gauge/weighing scale shall be calibrated having traceability

B.2 Procedure

B.2.1 Fix a toilet brush with bristles in upward direction in the brush holder with the help of screw (G). Divide the bristles into segments of about 10 mm length.

B.2.2 Insert all bristles of one tuft in the hole provided at the bottom of tubular tuft holder (C). Care should be taken not to allow bristles from adjacent segment to enter in to the hole. Fix the bristles firmly with the help of screw (D).

B.2.3 Adjust the pointer on dial to zero by adjustment of screw (F).

B.2.4 Move down the brush holder slowly with screw (F) watching the pointer on dial carefully until it reaches 5 kg mark and keep it there for 1 min. Then remove the brush from the gadget and examine. The bristles of any segment shall not come out during the test.

Note: The force required for pulling out an individual tuft shall not be less than 50.0 N for 1 min..

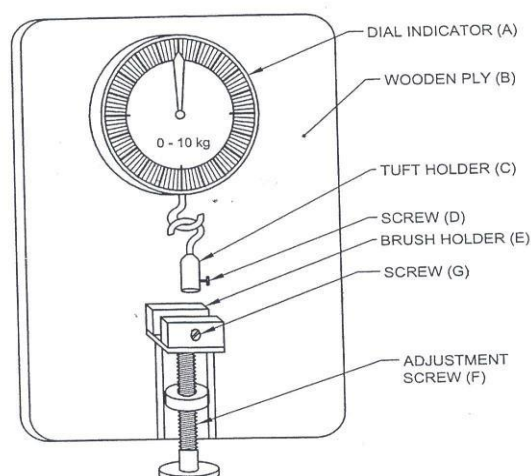


Fig. B1 Instrument for determination of pull strength

Annex C
(Normative)

Determination of Corrosion Resistance

Submerge all metal components for 7 h in distilled water, then dry them as rapidly as possible at a temperature not exceeding 70 °C and examine the surfaces that are required to be corrosion resistant for freedom from corrosion. Check for compliance with 4.2.2.

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Annex D (Normative)

Sampling of Toilet Brushes and Criteria for Conformity

D.1 Scale of Sampling

D.1.1 Lot – In any consignment, all the brushes of the same size and quantity shall be divided into groups of 500 brushes or less and each such group shall constitute a lot. Care shall be taken to ensure that brushes included in a lot do not differ in construction as far as possible

D.1.2 The conformity of the brushes in a lot to the requirements of this specification shall be ascertained for each lot separately. The number of brushes to be selected for this purpose shall be in accordance with col. 1 and col. 2 of Table D1

Table D1 — Scale of Sampling

No. of brushes in a lot <i>N</i>	No. of brushes to be selected <i>n</i>
Up to 10	2
11 to 25	3
26 to 50	4
51 to 100	5
101 to 150	6
151 to 300	7
301 to 500	8

D.1.3 The brushes shall be selected at random. To ensure randomness of selection one of the following procedures is recommended for use:

- a) If all the brushes in a lot are packed in one box, then starting from any brush, count them in any suitable order as 1, 2, up to r and so on, where r is the integral part of N/n (N and n being the lot size and sample size respectively). Every r^{th} brush thus counted shall be withdrawn to constitute the sample.
- b) If the brushes in a lot are packed in more than one box, approximately equal number of brushes shall be picked up at random from as many boxes as possible so as to obtain the required number of brushes as specified in Table D3.

D.2 Criteria for Conformity

For declaring the conformity of the lot to the requirements of this specification, all the brushes selected according to D.1.3 shall satisfy the relevant requirements given in clause 4.

Bibliography

- [1] IS 2616:1963 , *Specification for brush, (i) cleaning tank, and (ii) commode and lavatory*
- [2] TZS 1096;2010 –*Toilet Brush, (Commode Chutes) – Specification*

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