



## DRAFT TANZANIA STANDARD

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**Plastic sanitary appliances- Specification -Part 2: Sitting pan**

**TANZANIA BUREAU OF STANDARDS**

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Tanzania Commission for Science and Technology (COSTECH)  
Ministry of Works and Transportation (MoWT)  
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## **0. National Foreword**

The Tanzania Bureau of standards is the statutory national standards body for Tanzania, established under the Act.No.3 of 1975, amended by Act.No.2 of 2009.

This draft Tanzania Standard is being prepared by the BCDC 7 Sanitation Structures and Sanitary Appliances Technical Committee, under the supervision of the Building and Construction Divisional Standards Committee (BCDC)

In the preparation of this draft Tanzania Standard, reference was made to FTZS 3258-2:2021/EAS 1017-2:2021 *Sanitary appliances (vitreous china)-Specification - Part 2: Wash down water closet pan.*

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## 1. Scope

This draft Tanzania Standard specifies material, sampling, finish, dimensional, installation, physical and performance requirements, marking, and test methods for pour flush type sitting pans.

This standard is only applicable to sitting pans that are plastic materials.

## 2. Normative reference

The following referenced documents are indispensable for the application of this draft Tanzania Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

TZS 1876/ISO 472, *Plastics — Vocabulary*

TZS 651/EAS 355, *Toilet Paper-Specification*

BCDC 7(839) DTZS, *Plastic sanitary appliances- Specification -Part 2: Squatting pan*

## 3. Terms and definitions

For the purposes of this Tanzania Standard, the terms and definitions of the following shall apply.

### 3.1

#### **trap door**

hatch, intended to be opened temporarily to provide access through a platform or other horizontal structure.

### 3.2

#### **speck**

defect caused by agglomerates, aggregates and primary particles of the colorant and/or extender, impurities of basic test polymer.

### 3.3

#### **plastic**

Material which contains as an essential ingredient a high polymer and which, at some stage in its processing into finished products, can be shaped by flow.

### 3.4

#### **bubbles**

Entrapped air or material in the in the pan.

### 3.5

#### **short-short**

Incomplete filling of the mold

### 3.6

#### **knit lines**

lines showing where two molten masses of plastic did not fully weld upon meeting in the mold during the filling portion of the cycle.

### 3.7

#### **delamination**

poorly fused material.

**3.8****burns**

locally at the weld line or generally burned material.

**3.9****one-piece installation**

a complete set without removing the trap door

**3.10****durability**

ability of a specimen to resist the deleterious effect of its environment.

**4. General requirements**

The general requirement relating to material, colour, appearance, performance and test methods shall comply in accordance with BCDC 7(839) DTZS.

**4.1 Weight**

Each plastic sitting pan shall be not less than 4Kg in weight.

**4.2 Thickness**

The overall thickness of the plastic injection moulded sitting pan shall not be less than three (3) mm.

**5. Dimensions and tolerances**

**5.1** Sitting pans shall comply with the dimensions specified in Table 1 as indicated in Figure 1 and shall be subjected to the tolerances permitted.

**Table 1: Dimensions for sitting pans**

Sr. No.	Critical Dimensions	Code lettering figure 1	Dimensions (mm)		Tolerances
			Min	Max	
1	Length	L	425	600	± 2.00
2	Width (at widest point)	W	400	500	± 1.00
3	Height	H	300	400	± 1.00
4	Thickness bottom flange	T	2.5	4.00	± 0.25
5	Output hole dia.	Ø	77	110	± 0.50
6	Vertical drop in front wall of pan	E	60	80	± 1.00
7	Minimum slope angle of the bottom pan	S	25°		

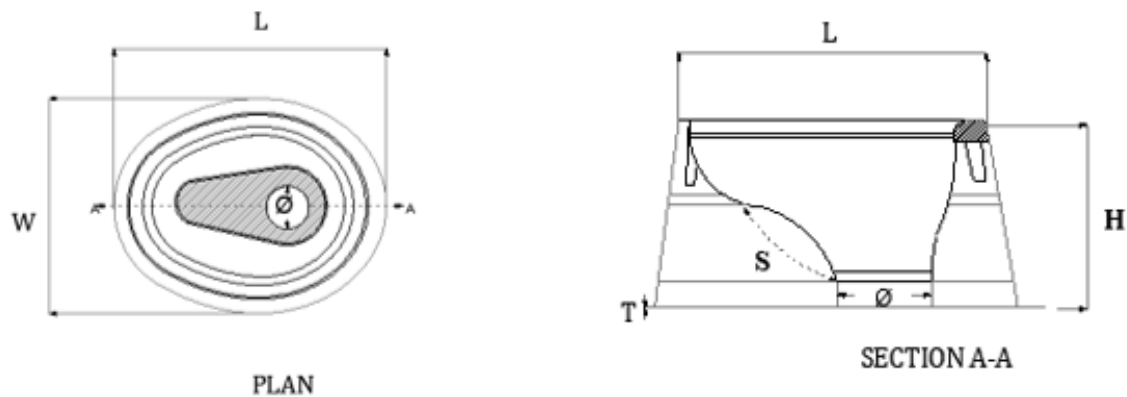


Fig. 1: sitting pan

**5.2** The sitting pan may also be made in other patterns and/or sizes where so agreed between the manufacturer and the purchaser. However, except for functional dimensions all other requirements as laid down in this standard shall comply.

## 6. Installation

Sitting pan shall be of a complete set with all its parts on a slab constructed over a pit. The sitting pan shall be provided with not less than four floor fixing holes of a latrine having a minimum diameter of 6.5 mm and shall have an integral door trap suitable for preventing foul gases escaping from a pit hole.

## 7. Finish

The surface of the pan shall be free from pinholes, unevenness and cracks. It shall contain no impurities. Surface of the pan shall be smooth and free from any sharp edges and unwanted curves.

## 8. Sampling and inspection

Sampling and inspection shall be done in accordance with BCDC 7(839) DTZS.

## 9. Instructions

Each pan shall be supplied with a label giving the following instructions:

- a) Wash with water
- b) Avoid abrasive or scoring powder
- c) Do not place near fire
- d) Do not use hard or wire brush for cleaning
- e) Washing liquid should have a pH range between 6.5 to 8.5

## 10. Marking, labelling and Packing

Each piece of sitting pan shall be legibly and indelibly marked at a suitable place with the following:

- a) Name and/or trademark of the manufacturer;
- b) country of origin;
- c) batch/lot number and

The sitting pans shall be packed as agreed to between the purchaser and the supplier.

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## **Annex A (Normative)**

### **Flushing tests for sitting pans**

#### **A.1. General**

These tests shall be conducted by connecting the sitting pan to a low level cistern. A cistern shall be fixed such that the height between the top of the pan and the bottom of the cistern is at least 1250 mm for high level and 700 mm for low level, and the sitting pan shall be connected to the cistern by 40 mm outer diameter pipe.

##### **A.1.1 Toilet paper test**

The pan shall be filled with water to its nominal water seal level and charged with six pieces of toilet paper complying with TZS 651. It shall then be flushed. This test shall be repeated four times and the pan shall discharge the full charge of the paper at least thrice out of four times.

##### **A.1.2 Smudge test**

The whole of the interior surface of the sitting pan to 40 mm below the flushing rim shall be smudged with quartz powder of contrasting colour passing through a 1.18 mm sieve and shall then be flushed, carefully observing the surface of the pan during the flushing. Immediately after the flushing, there shall be no smudge left on the pan.



## **Annex B**

### **(Normative)**

#### **Test for resistance to staining**

##### **B.1. Outline of the method**

Surface resistance to stain is carried out by immersing the test specimen in Carbon Tetrachloride for a specified period and then examining for delamination.

##### **B.2 Specimen**

A specimen of dimension 50 mm x 2.5 mm, is cut from the side of the pan, four specimens from separate sectors of the side are examined in each case.

##### **B.3 Reagent**

Carbon Tetrachloride confirming to the relevant standard.

The chemicals are following:

- a) 0.5 % aqueous solution of methylene blue
- b) A solution of sodium hypochlorite 10 %-14 % w/v available chlorine. A 10 % dilution is prepared for the test.
- c) 3 % aqueous solution of hydrogen peroxide,
- d) Amyl acetate
- e) Carbon tetrachloride, and
- f) 13 g of iodine in 1 l of ethanol

##### **B.4 Procedure**

Four (4) specimens are immersed in carbon tetrachloride at 40 °C for 4 h. The solvent is contained in 150 mm x 25 mm test tube immersed in a water bath at 40 °C ± 0.5 °C and allowed to attain the test temperature before the introduction of the specimens. After removal from the solvent, the specimens are placed on blotting paper and allowed to dry for 1 h. The extent and nature of the effect produced on its surface is recorded.

**Annex C**  
**(Normative)**  
**Impact strength test**

The test shall be carried out at room temperature of  $27 \pm 2$  °C. A steel ball weighing 1 kg shall be dropped on the plastic pan from a height of 180 cm. Examine for cracks.

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**Annex D  
(Normative)  
Reversion test method**

**D. 1 Outline of the method**

Reversion test is carried out by immersing the specimen in boiling water for a specified period and then determining the change in length. The change in length of any specimen shall not exceed five percent.

**D.2 Specimen**

A specimen of dimension 50 mm x 2.5 mm, is cut from the sidewall of the pan. The test specimen shall be cut in the direction parallel to the direction of flow of the material during the molding operation. Five such specimens from separate sectors of the pan shall be used for this test.

**D.3 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. Reversion is the reduction on length expressed as a percentage of the initial length of the specimen.

**Annex E**  
**(Normative)**  
**Load bearing test**

The water closet shall be fixed in a stable arrangement on the floor with proper screw. A load of  $400^{+5}_{-0}$  kg or a force of 4.05 kN shall be applied for a period of one hour by placing it on a wooden beam with a cross section of 100 mm x 100 mm, positioned across the centre of the opening of the top surface of the water closet hole. There shall be no damage or defect which shall occur to the pan.

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