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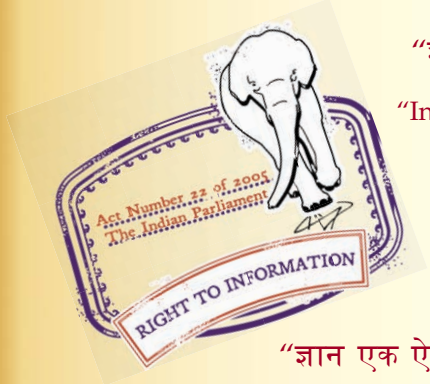
IS 2556-3 (2004): Vitreous Sanitary Appliances (Vitreous China) - - Part 3: Specific Requirements of Squatting Pans [CED 3: Sanitary Appliances and Water Fittings]

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"Knowledge is such a treasure which cannot be stolen"

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भारतीय मानक

# काँचाभ स्वच्छता साधित्र (काँचाभ चीनी मिट्टी) — विशिष्टि

## भाग 3 बिठाव कुंडों के लिए विशिष्ट अपेक्षाएँ

*( पाँचवां पुनरीक्षण )*

*Indian Standard*

# VITREOUS SANITARY APPLIANCES (VITREOUS CHINA) — SPECIFICATION

## PART 3 SPECIFIC REQUIREMENTS OF SQUATTING PANS

*( Fifth Revision )*

ICS 91.140.70



BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

*September* 2004

**Price Group 3**

FOREWORD

This Indian Standard (Part 3) (Fifth Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Sanitary Appliances and Water Fittings Sectional Committee had been approved by the Civil Engineering Division Council.

This standard was first published on 1963. The first, second, third and fourth revisions were issued in 1967, 1973, 1981 and 1994 respectively. In this revision, saw dust and splash test have been included. Other changes keeping in view the current manufacturing practices in the country have been made.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

# *Indian Standard*

# VITREOUS SANITARY APPLIANCES (VITREOUS CHINA) — SPECIFICATION

## PART 3 SPECIFIC REQUIREMENTS OF SQUATTING PANS

## *( Fifth Revision )*

### 1 SCOPE

This standard (Part 3) covers the requirements for patterns, sizes, construction, dimensions, finish, flushing tests, inspection and marking for vitreous squatting pans.

### 2 REFERENCES

The Indian Standards given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards given below:

| *IS No.* | *Title* |
|---|---|
| 774 : 1984 | Specification for flushing cistern for water closets and urinals (other than plastic cistern) (*fifth revision*) |
| 2556 | Vitreous sanitary appliances (vitreous china) — Specification |
| (Part 1) : 1994 | General requirements (*third revision*) |
| (Part 7) : 1995 | Specific requirements of accessories for sanitary appliances (*third revision*) |
| 9140 : 1996 | Method of sampling of vitreous and fire clay sanitary appliances (*second revision*) |

### 3 GENERAL REQUIREMENTS

The general requirements relating to terminology, material and manufacture, glazing, defects, minimum thickness, tolerances, performance and methods of tests shall conform to IS 2556 (Part 1).

### 4 PATTERNS AND SIZES

**4.1** Squatting pans shall be made in any of the following patterns and sizes:

| *Pattern* | *Size,* mm | *Ref to Fig.* |
|---|---|---|
| Long | 580 and 630 | Fig. 1A and 1B |
| Orissa | 580 × 440 and 630 × 450 | Fig. 2 |
| Rural | 480 | Fig. 3 |

**4.2** The squatting 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 be complied with.

### 5 CONSTRUCTION

**5.1** Each pan shall have an integral flushing rim of suitable type. Rural pattern, however, shall have no integral flushing rim.

**5.1.1** Squatting pan, both Long and Orissa pattern, of 630 mm size shall be of the box rim type. Squatting pan of sizes smaller than 630 mm may be made either box rim or open rim type. In case of pans with box rim construction, number of holes shall be provided in the rim to satisfy requirements of flushing tests given in **8**. The flushing rim shall have an inlet or supply horn for connecting the flush pipe. The flushing rim and inlet shall be of self-draining type. A weephole shall be provided at the flushing inlet of the pan. The flushing inlet, for the long pattern pan, may be located either at the narrow end or broad end or at both the ends as stipulated by the purchaser.

**5.2** The inside of the bottom of the pan shall have sufficient slope from the front towards the outlet to enable easy and quick disposal while flushing. The exterior surface shall not be glazed and this surface shall be sufficiently rough or scored or grooved at right angles to the axis of the outlet.

**5.3** Each pan shall be provided with a trap where so specified by the purchaser. The trap for Long and Orissa pattern pan shall have either *P* or *S* outlet with or without inspection vent as specified by the purchaser and the trap shall conform to the requirements given in IS 2556 (Part 7). The trap for rural pattern pan shall conform to the dimensions specified in Fig. 3B of IS 2556 (Part 7). The trap shall be glazed inside.

### 6 DIMENSIONS AND TOLERANCES

**6.1** The functional and connecting dimensions of Long and Orissa pattern pans shall conform to those given in Tables 1 and 2 respectively read with Fig. 1A, 1B and 2. Dimensions of rural pattern shall be as shown in Fig. 3.

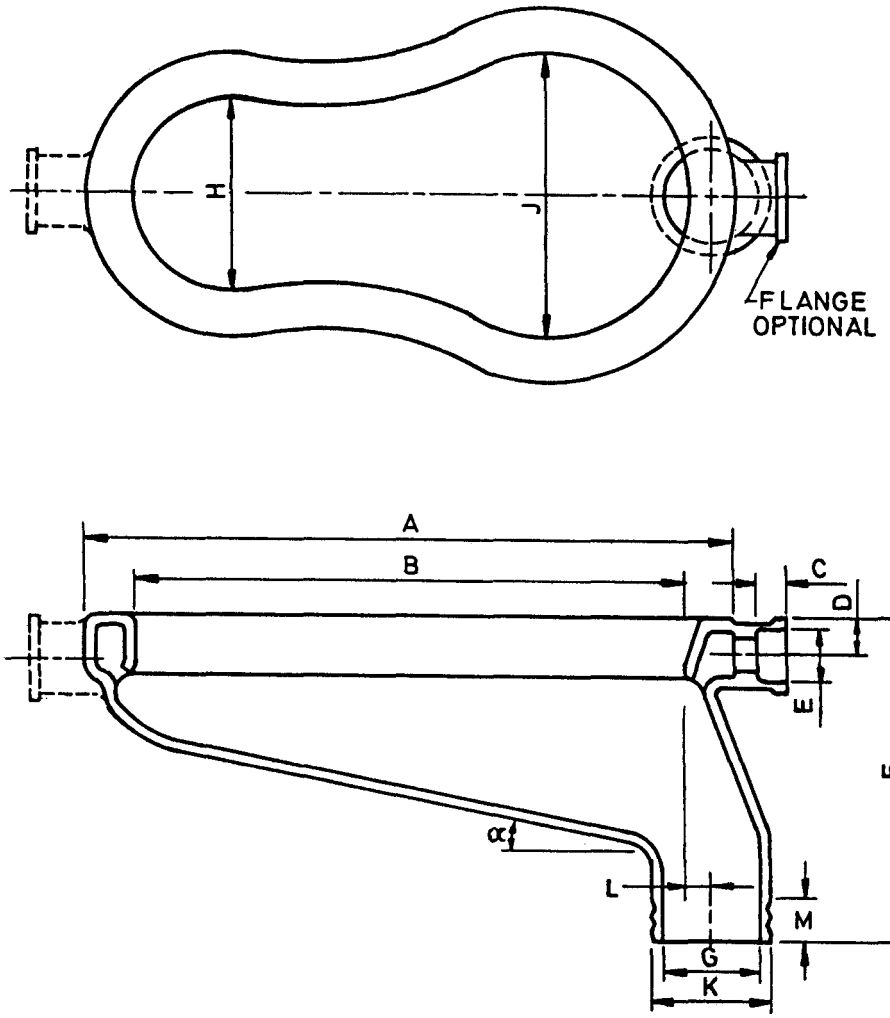



FIG. 1A LONG PATTERN SQUATTING PAN, TYPE I

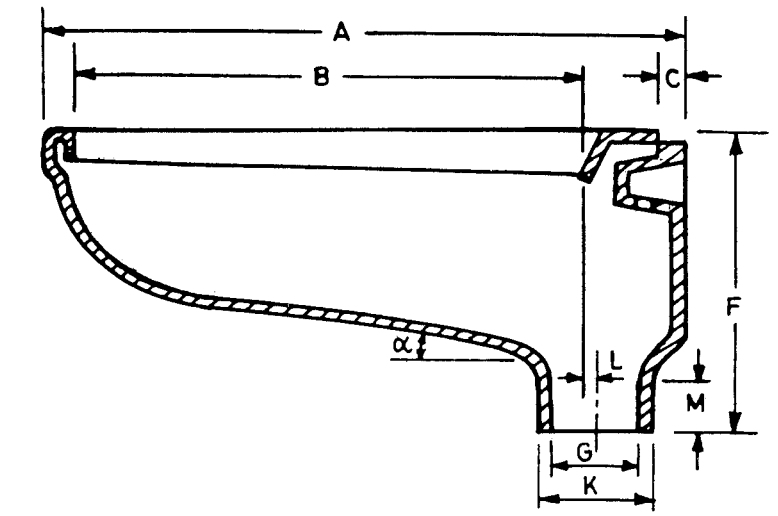
## Table 1 Functional Dimensions of Long and Orissa Pattern

(*Clause* 6.1)

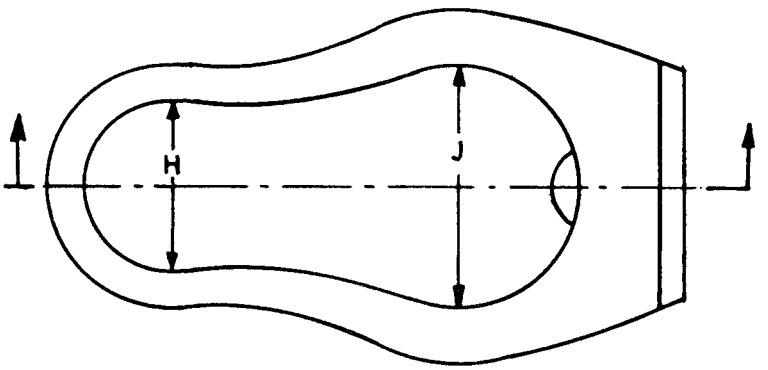
All dimensions in millimetres.

| Sl No. | Description | Ref in Fig. 1A, 1B and 2 | Long Pattern of Size | | Orissa Pattern of Size | |
|---|---|---|---|---|---|---|
| | | | 580 | 630 | 580 × 440 | 630 × 450 |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| i) | Length | *A* | 580 | 630 | 580 | 630 |
| ii) | Length of opening, *Min* | *B* | 480 | 530 | 470 | 500 |
| iii) | Height | *F* | 300 ± 10 | 320 ± 10 | 300 ± 10 | 320 ± 10 |
| iv) | Width of opening, small end | *H* | 170 ± 10 | 170 ± 10 | 180 ± 10 | 180 ± 10 |
| v) | Width of opening, wide end | *J* | 260 ± 10 | 260 ± 10 | 210 ± 10 | 220 ± 10 |
| vi) | Slope of bottom of pan | | 15° | 15° | 15° | 15° |
| vii) | Distance between the centre of outlet to the inside face of flushing rim at the back, *Max* | *L* | 70 | 70 | 70 | 70 |
| viii) | Width | *N* | – | – | 440 | 450 |
| ix) | Length of footrest | *P* | – | – | 310 ± 10 | 310 ± 10 |

NOTE — Tolerances where not specified shall conform to Part 1 of the standard.




SECTIONAL VIEW




PLAN

FIG. 1B LONG PATTERN SQUATTING PAN, TYPE II

## Table 2 Connecting Dimensions

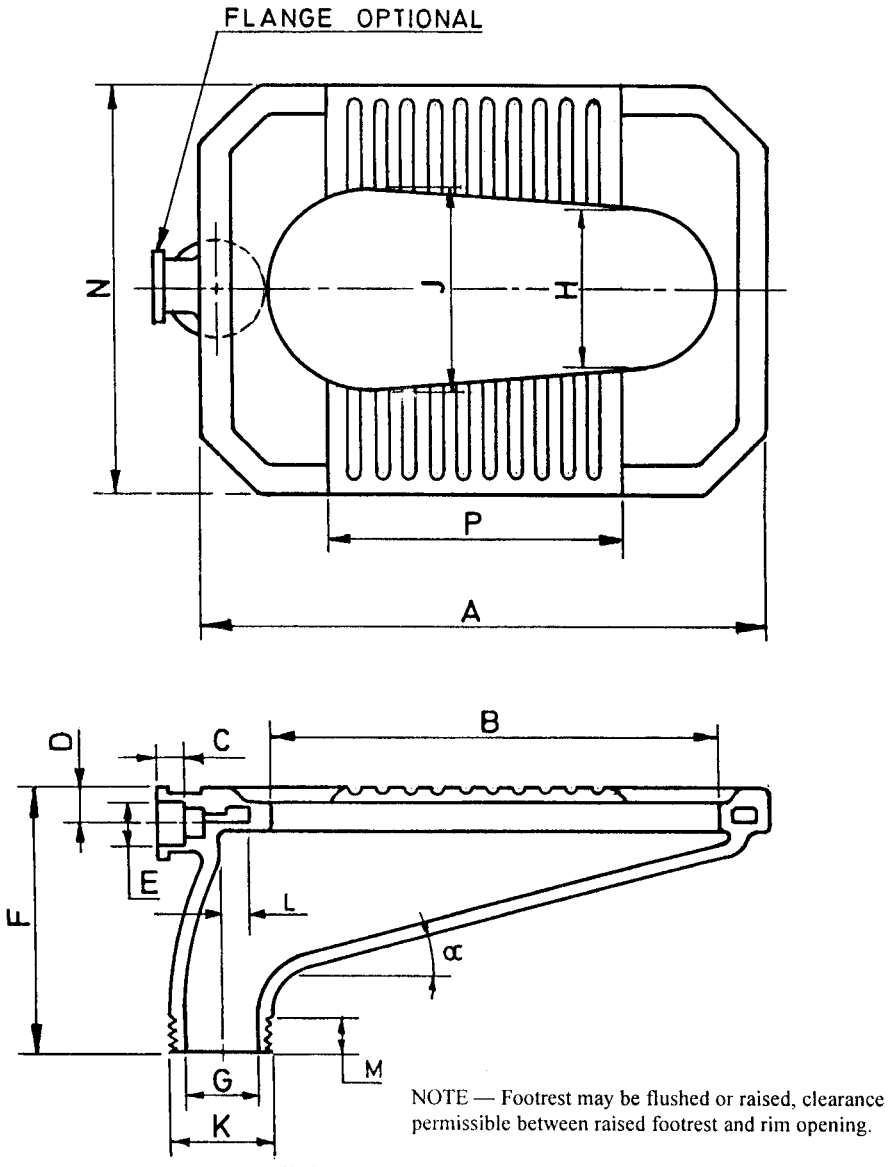
(*Clause* 6.1)

All dimensions in millimetres.

| Sl No. | Description | Ref in Fig. 1A, 1B and 2 | Long Pattern of Size | | Orissa Pattern of Size | |
|---|---|---|---|---|---|---|
| | | | 580 | 630 | 580 × 440 | 630 × 450 |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| i) | Depth of flush inlet socket, *Min* | *C* | 25 | 25 | 25 | 25 |
| ii) | Centre of inlet to top of inlet | *D* | 34 ± 3 | 34 ± 3 | 34 ± 3 | 34 ± 3 |
| iii) | Internal dia of flush inlet socket | *E*[1] | 50 ± 3 | 50 ± 3 | 50 ± 3 | 50 ± 3 |
| iv) | Diameter of outlet, internal, *Min* | *G*[2] | 80 | 80 | 80 | 80 |
| v) | Diameter of outlet, external | *K* | 102 ± 5 | 102 ± 5 | 102 ± 5 | 102 ± 5 |
| vi) | Length of serrated part of outlet, *Min* | *M* | 40 | 40 | 40 | 40 |

[1] Ovality is permissible within the variation allowed for the dimension.

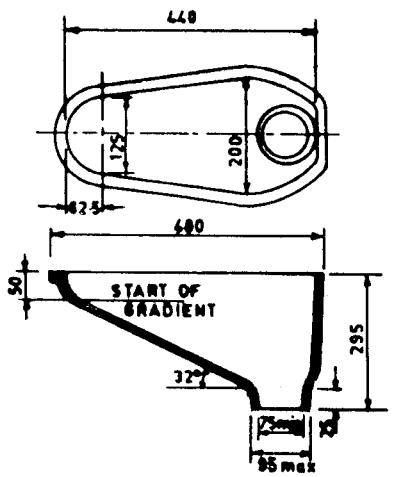
[2] Ovality is permissible within the dimensions for inlet and outlet diameters.




NOTE — Footrest may be flushed or raised, clearance permissible between raised footrest and rim opening.

All dimensions in millimetres.

FIG. 2 ORISSA PATTERN SQUATTING PAN




All dimensions in millimetres.

FIG. 3 RURAL PATTERN SQUATTING PAN

**6.2** The top surface, in the case of long pattern shall not at any point vary from its design plane or contour by more than 6 mm for size 580 mm and by more than 10 mm for size 630 mm; the variation shall not exceed 10 mm in the case of Orissa pattern.

## 7 FINISH

The inside of the pan shall be glazed uniform and smooth in order to ensure an efficient flush.

## 8 FLUSHING TESTS

The Long and Orissa patterns fitted with the trap with which it purports to form a suite, shall satisfy the tests given in **8.1**, **8.2**, **8.3**, **8.4** and **8.5**. For carrying out these tests, a flushing cistern conforming to IS 774 shall be fixed such that the height between the top of closet pan and bottom of the cistern is 1 250 mm, minimum for high level and 700 mm, minimum for low level and the closet pan is connected with cistern by a 40 mm outer diameter pipe. These tests shall be carried out by using the flushing cistern of the capacity with which the appliance is to be used.

### 8.1 Toilet Paper Test

The pan shall be filled with water to its nominal water seal level and charged with six pieces of usual toilet paper or polythene sheet of thickness 0.05 mm approximately 150 mm × 115 mm in size and loosely crumpled. 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.

### 8.2 Smudge Test

The whole of the interior surface of the pan to 40 mm below the flushing rim shall be smudged with quartz power of contrasting colour passing through 1.18 mm IS 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.

### 8.3 Water Holding Capacity Test

The pan, when sealed at the outlet and vent (if fitted) with water-tight seal, shall be capable of holding not less than 10 l of water between the normal water-level and the highest possible water-level of the pan as installed.

### 8.4 Saw Dust Test

**8.4.1** *Specification of the Saw Dust*

20 g of dry saw dust test sifted through 2 mm sieve.

**8.4.2** *Procedure*

Set up the pan, cistern or flush valve and flush pipe (if required) as specified by the manufacturer. Charge the pan with water to its designed water seal level. Fully wet the entire internal surface of the pan below the rim. Sprinkle 20 g of fine dry saw dust of above specification on the inside of the pan between the normal water level and the flushing rim as completely and evenly as possible. Then flush the pan.

The sprinkle saw dust should be cleaned below 40 mm of rim of pan.

### 8.5 Splash Test

**8.5.1** *Procedure*

Set up pan, cistern or flush valve and flush pipe (if required) as specified by the manufacturer. Charge the pan with coloured water to its design water seal level. Ensure that the floor area is cleaned and dry where the splash test to be carried out. Activate the flush valve or cistern to discharge the squatting pan. Observe and record whether flushing water splashed over rim onto the floor. Repeat the test 5 times. Record whether the flushing water splash over the rime onto the floor. Isolated droplets up to 10 Nos. shall not be the cause for rejection.

## 9 SAMPLING PROCESS, INSPECTION AND LOT INSPECTION

The recommended method of sampling, process inspection and lot inspection shall be as given in IS 9140.

## 10 MARKING

**10.1** Each piece of squatting pan shall be clearly and indelibly marked at a suitable place with the following:

a) Name or trade-mark of the manufacturer, and

b) Batch/lot number.

### 10.2 BIS Certification Marking

The product may also be marked with Standard Mark.

**10.2.1** The use of Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act,* 1986 and the Rules and Regulations made thereunder. The details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

## Bureau of Indian Standards

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This Indian Standard has been developed from Doc: No. CED 3 (7000).

**Amendments Issued Since Publication**

| Amend No. | Date of Issue | Text Affected |
|---|---|---|
| | | |
| | | |
| | | |

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