IS 2556-14 (1995): vitreous sanitary appliances (vitreous china): Part 14 Specific requirements of integrated squatting pans [CED 3: Sanitary Appliances and Water Fittings]

BLANK PAGE

IS 2556 (Part 14) : 1995
(Reaffirmed 2005)

भारतीय मानक

काँचाभ स्वच्छता साधित्र (काँचाभ चीनी मिट्टी) — विशिष्टि

भाग 14 समाकालीन स्क्वैटिंग आथानों की विशिष्ट अपेक्षाएँ

(पहला पुनरीक्षण)

Indian Standard

VITREOUS SANITARY APPLIANCES (VITREOUS CHINA) — SPECIFICATION

PART 14 SPECIFIC REQUIREMENTS OF INTEGRATED SQUATTING PANS

(First Revision)

UDC 696·14·18 : 666·596

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

June 1995

Price Group 3

FOREWORD

This Indian Standard (Part 14) (First 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 in 1974 and in this first revision changes found necessary in the light of comments made by the users, and improvements made by the sanitaryware industry have been incorporated.

The dimensions which are not critical for plumbing have been separated as 'functional dimensions'. The critical plumbing dimensions however have been included in the standard as 'connecting dimensions'.

The composition of the technical committee responsible for the formulation of this standard is given in Annex A.

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 14 SPECIFIC REQUIREMENTS OF INTEGRATED SQUATTING PANS

(First Revision)

1 SCOPE

This standard (Part 14) lays down the requirements for patterns, dimensions and tolerances, construction, finish, tests, inspection and marking for integrated vitreous squatting pans.

2 REFERENCES

The Indian Standards mentioned below are the necessary adjuncts to this standard:

IS No.	*Title*
774 : 1984	Specification for flushing cistern for water closets and urinals (other than plastic cisterns) (*fourth revision*)
2556 (Part 1) : 1994	Specification for vitreous sanitary appliances (vitreous china): Part 1 General requirements (*third revision*)
9140 : 1995	Method of sampling of vitreous and fire clay sanitary appliances (*second revision*)

3 REQUIREMENTS

The general requirements relating to terminology, materials, manufacture, glazing defects, minimum thickness, tolerances, performance and methods of test as covered in IS 2556 (Part 1) : 1994 shall be complied with.

4 PATTERN

4.1 The pattern of the integrated squatting pan covered in this standard is long pattern 500.

4.2 The squatting pans may also be made in other patterns and sizes where so agreed to between the manufacturer and the purchaser. However, except for the functional dimensions, all other requirements as laid down in this standard shall be complied with. Depth of waterseal shall in no case be less than 50 mm.

5 DIMENSIONS AND TOLERANCES

5.1 The functional and connecting dimensions of the pan shall conform to those given in Table 1 and Table 2 respectively, read with Fig. 1.

Table 1 Functional Dimensions

(*Clause* 5.1)

All dimensions in millimetres.

Sl No.	Description	Ref in Fig. 1	Long Pattern 500
(1)	(2)	(3)	(4)
i)	Length	L	500
ii)	Overall length, *Max*	L_1	730
iii)	Length of opening	L_2	430
iv)	Width of opening (small end)	W_1	150
v)	Width of opening (wide end)	W_2	230
vi)	Height	h_1	320 ± 10
vii)	Slope of bottom of pan	α	$100 \pm 3°$
viii)	Depth of water seal, *Min*	T	50

5.2 Where tolerances are not given for specific dimensions, these shall be as laid down in **8** of IS 2556 (Part 1) : 1994.

6 CONSTRUCTION

6.1 The pan shall be provided with either box or open rim. The flushing inlet may be located either at the narrow end or broad end or at both ends as stipulated by the purchaser.

6.2 Where so required by the sanitation authority having jurisdiction over the area of installation, each integrated pan shall have antisyphonage vent horn on the outlet side of the trap with dimensions conforming to Fig. 2 and on either right or left hand as specified, set at an angle of 45° (*see* Fig. 2) and with invert and vent horn not below the central line of the outlets.

6.3 'S' trap should be provided in one or two pieces. Where made of two pieces, the bend shall conform to the requirements given in Table 3, read with Fig. 3.

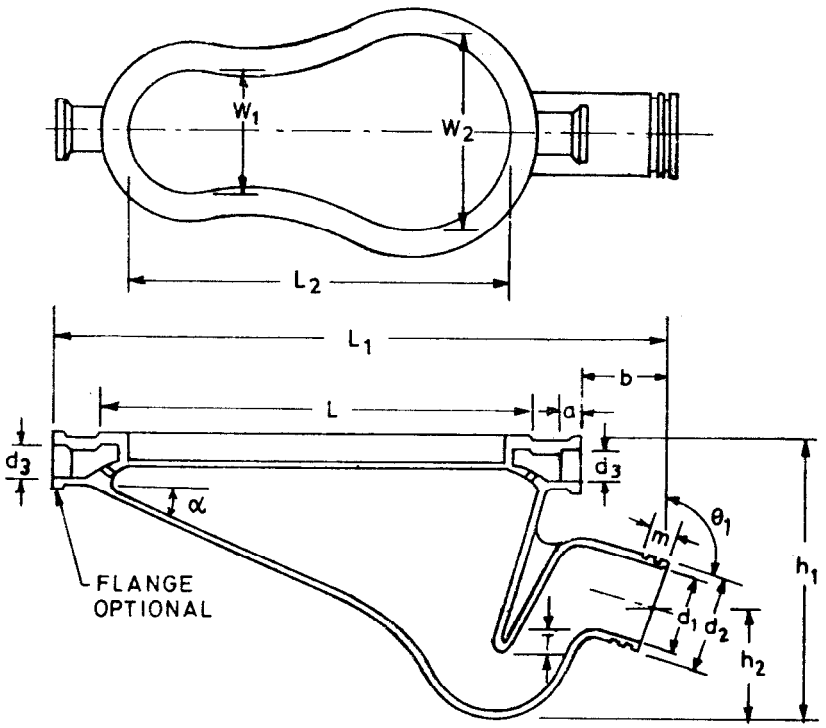

FIG. 1 INTEGRATED SQUATTING PAN

Table 2 Connecting Dimensions

(*Clause* 5.1)

All dimensions in millimetres.

Sl No.	Description	Ref in Fig. 1	Long Pattern 500
(1)	(2)	(3)	(4)
i)	Depth of flush inlet socket	a	25, *Min*
ii)	Distance from end of flush inlet socket to outside of outlet	b	70, *Min*
iii)	Dia of outlet, internal[1)]	d_1	80, *Min*
iv)	Dia of outlet, external[1)]	d_2	102 ± 5
v)	Internal dia of flush inlet socket[2)]	d_3	50 ± 3
vi)	Length of serrated part of outlet	m	40, *Min*
vii)	Distance of the centre of outlet from the bottom of the pan	h_2	140
viii)	Angle of the outlet with the vertical plane passing through its centre	θ_1	104°

[1)] Ovality is permissible within the dimensions allowed for the internal and external diameters.

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

7 FINISH

Inside surface of the integrated pan shall be glazed uniform and smooth in order to ensure efficient flush.

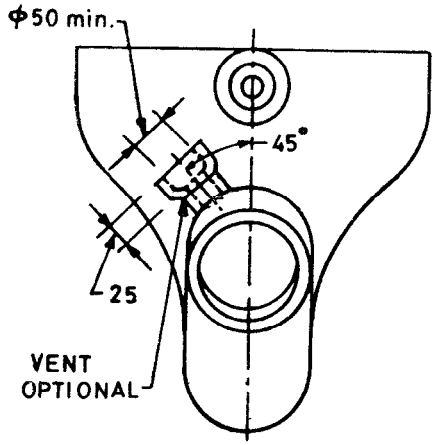

FIG. 2 ANTISYPHONAGE VENT HORN

8 FLUSHING TEST

8.1 The integrated pan shall satisfy the tests given in **8.2**, **8.3**, **8.4** and **8.5**.

8.1.1 A10-litre flushing cistern conforming to IS 774 : 1984, shall be fixed such that the height between top of the pan and bottom of the cistern is 125 cm and the pan is connected with the cistern by 32 mm dia pipe.

8.2 Toilet Paper Test

The pan shall be filled with water to its nominal water seal level and charged with six pieces of

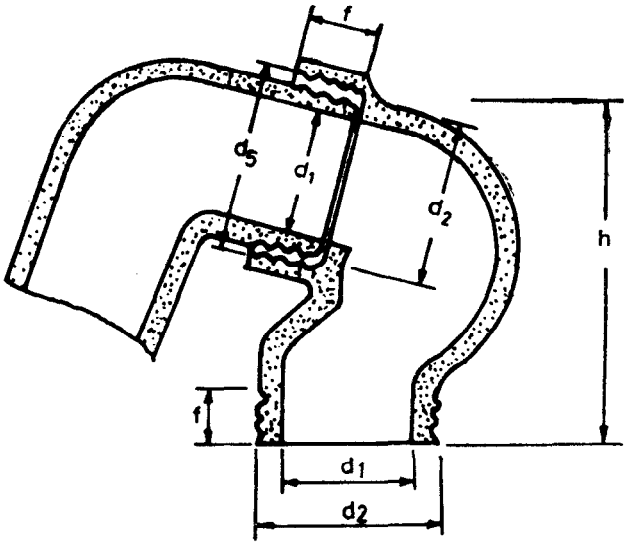

FIG. 3 TYPICAL DETAILS OF SEPARATE OF TWO PIECES

Table 3 Dimensions of Two Piece Bend

(*Clause* 6.3)

All dimensions in millimetres.

Sl No.	Description	Ref in Fig. 3	Long Pattern 500
(1)	(2)	(3)	(4)
i)	Internal dia of outlet[1)]	d_1	80, *Min*
ii)	External dia of outlet[1)]	d_2	102 ± 5
iii)	Internal dia of inlet socket	d_5	115
iv)	Depth of inlet socket	f	40, *Min*
v)	Height of the bend	h	207

[1)] Ovality is permissible within the dimension allowed for the internal and external diameters.

usual toilet paper or polyethylene 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 the four times.

8.3 Smudge Test

The whole of the interior surface of the pan to 40 mm below the flushing rim shall be 'Smudged' with quartz powder of contrasting colour passing through 1·18 mm IS sieve and shall then be flushed, carefully observing the pan during the test. Immediately after the flush, there shall be no smudge left in the pan.

8.4 Holding Capacity Test

The pan, when sealed at the outlet and vent (if provided), shall be capable of holding not less than 10 litres of water between the normal water level and the highest possible water level of the pan as installed.

8.5 Ball Test

The ball shall be made of non-absorbent material. The relative density of the ball shall be between 1·075 and 1·080. The diameter of the ball shall be 43 ± 0·5 mm. Place the ball into the pan to be tested and then flush the pan. The ball shall be discharged in the normal manner.

9 SAMPLING, PROCESS INSPECTION AND LOT INSPECTION

The recommended method of sampling, process inspection and lot inspection shall be as given in IS 9140 : 1995.

10 MARKING

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

i) Name or trade-mark of the manufacturer; and

ii) Batch/lot number.

10.2 BIS Certification Marking

10.2.1 Each piece of squatting pan may also be marked with the Standard mark.

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

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

Sanitary Appliances and Water Fittings Sectional Committee, CED 3

Chairman	*Representing*
SHRI S. PRAKASH	Delhi Water Supply and Sewage Disposal Undertaking (MCD), Delhi
Members	
SHRI P. K. JAIN (*Alternate* to Shri S. Prakash)	
ADVISER (PHE)	Central Public Health and Environmental Engineering, New Delhi
DEPUTY ADVISER (PHE) (*Alternate*)	
SHRI J. R. AGGARWAL	M/s Goverdhan Das P. A., Calcutta
SHRI SANJAY AGGARWAL (*Alternate*)	
SHRI K. AUDISESHIAH	E. I. D. Parry (India) Ltd, Madras
SHRI K. JAYAKANTH (*Alternate*)	
SHRI VIDUR BHASKAR	Bhaskar Stoneware Pipes Pvt Ltd, Faridabad
SHRI ARUN KANTI BISWAS	National Environmental Engineering Research Institute (CSIR), Nagpur
SHRI K. B. CHOPRA	Engineer-in-Chief's Branch, Ministry of Defence, Army Headquarters, New Delhi
LT-COL G. T. KAUSHIK (*Alternate* I)	
LT-COL S. K. SHARMA (*Alternate* II)	
DR T. K. DAN	Central Glass and Ceramic Research Institute (CSIR), Calcutta
HYDRAULIC ENGINEER	Municipal Corporation of Greater Bombay, Bombay
DEPUTY HYDRAULIC ENGINEER (*Alternate*)	
SHRI D. K. KANUNGO	National Test House, Calcutta
SHRI R. KAPOOR (*Alternate*)	
MANAGING DIRECTOR	Kerala Water Authority, Public Health Engineering Department, Trivandrum
CHIEF ENGINEER (PS & G) (*Alternate*)	
SHRI K. LAKSHMI NARAYANA	Hindustan Shipyard Ltd, Visakhapatanam
SHRI A. SHARIFF (*Alternate*)	
SHRI S. K. NEOGI	Institution of Public Health Engineers India, Calcutta
SHRI A. K. SENGUPTA (*Alternate*)	
SHRI O. P. RATRA	Building Material and Technology Promotion Council, New Delhi
SHRI R. S. ROTITHOR	M/s Kirloskar Brothers Limited, Pune
SHRI S. D. JOSHI (*Alternate*)	
SHRI D. K. SERGAL	Leader Engineering Works, Jallandhar
SHRI B. B. SIKKA (*Alternate*)	
SENIOR CIVIL ENGINEER (WATER SUPPLY)	Ministry of Railways (Railway Board), New Delhi
SHRI R. C. SHARMA	Directorate General of Supplies and Disposals, New Delhi
SHRI SUDESH KUMAR SHARMA	Central Building Research Institute, Roorkee
SHRI SURESH KUMAR SHARMA (*Alternate*)	
SUPERINTENDING ENGINEER (TAC)	U. P. Jal Nigam, Lucknow
EXECUTIVE ENGINEER (TAC) (*Alternate*)	
SHRI R. K. SOMANY	Hindustan Sanitaryware Industries Ltd, Bahadurgarh
SHRI SANDIP SOMANY (*Alternate*)	
SUPERINTENDING SURVEYOR OF WORKS (NDZ1)	Central Public Works Department, New Delhi
SURVEYOR OF WORKS (NDZ1) (*Alternate*)	
SHRI S. SUNDARAM	Glass Fibre Division, Ceat Ltd, Hyderabad
REPRESENTATIVE	Central Institute of Plastic Engineering and Technology, Madras
REPRESENTATIVE	Institution of Engineers (India), New Delhi
SECRETARY GENERAL	Indian Water Works Association, Bombay
SHRI D. K. THOMBRE	Maharashtra Water Supply and Sewage Board, New Bombay
SHRI J. R. MEHTA, Director (Civ Engg)	Director General, BIS (*Ex-officio Member*)

Member Secretaries
SHRI S. S. SETHI
Director (Civ Engg), BIS
and
SHRI R. S. JUNEJA
Joint Director (Civ Engg), BIS

(*Continued on page* 5)

(*Continued from page* 4)

Domestic Sanitary Appliances and Accessories Subcommittee, CED 3 : 1

Convener	*Representing*
SHRI R. K. SOMANY	Hindustan Sanitaryware and Industries Ltd, Bahadurgarh
Members	
SHRI V. ANANTHANARAYANAN	East India Ceramics, Vellore, Tamil Nadu
CHIEF ENGINEER	Tamil Nadu Water Supply and Drainage Board, Madras
CHIEF ENGINEER (SEWERAGE)	Municipal Corporation of Greater Bombay, Bombay
DEPUTY CHIEF ENGINEER (*Alternate*)	
DR T. K. DAN	Central Glass and Ceramic Research Institute (CSIR), Calcutta
DEPUTY DIRECTOR	Directorate General of Supplies and Disposals, New Delhi
SHRI G. DHAMODARAM	E. I. D. Parry (India) Ltd, Madras
SHRI V. GOPAL (*Alternate*)	
MANAGING DIRECTOR	Kerala Water Authority, Public Health Engineering Department, Trivandrum
DEPUTY CHIEF ENGINEER (WORKS)	Research Designs and Standards Organization, Lucknow
EXECUTIVE ENGINEER (WORKS) (*Alternate*)	
SHRI A. A. GANPULE	Parshuram Pottery Works Co, Thangadh
SHRI RAJENDRA KUMAR (*Alternate*)	
SHRI B. D. KOTHARI	Madhusudan Ceramics, New Delhi
SHRI S. RAMKUMAR (*Alternate*)	
SHRI B. S. MIRCHANDANI	Phenoweld Polymer Pvt Ltd, Bombay
SHRI P. R. GUPTA (*Alternate*)	
SHRI S. PRAKASH	Delhi Water Supply and Sewage Disposal Undertaking (MCD), New Delhi
SHRI S. S. RAMRAKHYANI (*Alternate*)	
SHRI Y. N. R. RAO	Engineer-in-Chief's Branch, Army Headquaters, New Delhi
MAJ K. B. SINGH (*Alternate*)	
SHRI O. P. RATRA	Building Materials and Technology Promotion Council, New Delhi
SHRI U. SARKAR	Hindustan Sanitaryware and Industries Ltd, Bahadurgarh
SHRI V. K. JAIN (*Alternate*)	
SHRI SUDESH KUMAR SHARMA	Central Building Research Institute, Roorkee
SHRI SURESH KUMAR SHARMA (*Alternate*)	
SUPERINTENDING SURVEYOR OF WORKS (NDZ1)	Central Public Works Department, New Delhi
SURVEYOR OF WORKS (NDZ1) (*Alternate*)	

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 1986* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition.

This Indian Standard has been developed from Doc No: CED 3 (5334).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 331 01 31, 331 13 75

Telegrams : Manaksanstha
(Common to all offices)

Regional Offices :	Telephone
Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002	331 01 31, 331 13 75
Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, Maniktola, CALCUTTA 700054	37 84 99, 37 85 61, 37 86 26, 37 86 62
Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160022	60 38 43, 60 20 25
Southern : C. I. T. Campus, IV Cross Road, MADRAS 600113	235 02 16, 235 04 42, 235 15 19, 235 23 15
Western : Manakalaya, E9 MIDC, Marol, Andheri (East), BOMBAY 400093	632 92 95, 632 78 58, 632 78 91, 632 78 92

Branches : AHMADABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. LUCKNOW. PATNA. THIRUVANANTHAPURAM.

Printed at New India Printing Press, Khurja, India

AMENDMENT NO. 1 SEPTEMBER 1996
TO
IS 2556 (Part 14) : 1995 VITREOUS SANITARY APPLIANCES (VITREOUS CHINA) — SPECIFICATION

PART 14 SPECIFIC REQUIREMENTS OF INTEGRATED SQUATTING PANS

(First Revision)

(*Page* 1, *clause* **2**) — Substitute the following for the existing:

'IS 9140 : 1996 Methods of sampling of vitreous and fire clay sanitary appliances (*second revision*)'

(*Page* 3, *clause* **9**, *line* 3) — Substitute 'IS 9140 : 1996' *for* 'IS 9140 : 1995'.

(CED 3)

Reprography Unit, BIS, New Delhi, India