भारतीय मानक **IS 2616 : 2023**

Indian Standard

सफाई टैंक और कमोड/शौचालय के लिए ब्रश — विशिष्टि

(पहला पुनरीक्षण)

Brush For Cleaning Tank and Commode/Lavatory — Specification

(First Revision)

ICS 97.170

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March 2023 **Price Group 6**

Brushware, Polishes, Lac and Lac Products Sectional Committee, CHD 23

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Brushware, Polishes, Lac and Lac Products Sectional Committee has been approved by the Chemical Division Council.

Brushes with palmyra fibre are in great demand by the Indian railways particularly, as well as by others for cleaning of commodes and squat pans having either short or long chutes.

The standard was originally published in 1963. This specification covering the requirements of brush for cleaning tank and commode/lavatory is essentially used for commodes provided with short length chutes for squat pans and also for cleaning water tanks. In this revision, PP or nylon (polyamide) has been added as the filling material to be used in the manufacturing of brushes in addition to the existing one. Also, all amendments have been incorporated in the standard. The title of the Standard is also suitably amended. Further, packing and marking clause has been updated.

The composition of the committee responsible for formulation of this standard is listed in Annex D.

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, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. 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

BRUSH FOR CLEANING TANK AND COMMODE/LAVATORY — SPECIFICATION

(First Revision)

1 SCOPE

This standard prescribes the requirements and methods of test for brush used for cleaning tank and commode/lavatory.

2 REFERENCES

The following Indian Standards 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 agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below:

IS No.	*Title*
IS 384 (Part 1) : 2012	Brushes, paints and varnishes, flat — Specification Part 1 Heavy duty (*sixth revision*)
IS 1078 : 1987	Specification for copper naphthenate (*second revision*)
IS 1745 : 2018	Petroleum hydrocarbon solvents — Specification (*third revision*)

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 707, IS 5060 and the following shall apply.

3.1 Approved Tender Sample — The sample accepted by the indentor or purchaser or inspection authority as basis for supply.

NOTE — When a sample is tested and approved by the indentor or purchaser or an inspection authority, the results of such tests as will permit the supplier to meet the limits imposed by the specification for deliveries shall be made available to the supplier. However, all tests need to be carried out on the tender sample.

4 REQUIREMENTS

4.1 Materials

The brushes shall be manufactured from the following materials.

4.1.1 *Filling Material*

This shall consist of palmyra (*Borassus flabellifer* Linn. fam. *Palmoe*) fibre which shall be clean, free from dust and other extraneous matter or PP or nylon (polyamide) having diameter as 0.50 mm for cleaning tank and 0.35 mm for lavatory and commode brush and the same should be manufactured with virgin PP material and not recycled.

As regards colour, luster and stiffness, the filling material shall match those used in the approved tender sample. The solid dressing of bristles used shall be as per the approved tender sample, if so agreed to by the indentor.

4.1.2 *Timber*

4.1.2.1 Any of the timber species listed in Annex A shall be used in the manufacture of back and handle of the brush as shown in Fig. 1.

4.1.2.2 The timber shall be reasonably straight-grained and well-seasoned to a moisture content not exceeding 15 percent when tested by the electronic moisture meter method. In case of dispute, the oven-dry method shall be used (*see* Annex C).

4.1.2.3 The timber shall be free from brashness, any kind of decay (rot), insect attack, centre heart (pith), knots (except pin knots), cracks, warp and any other defects which may reduce the life of the brush or affect its utility.

4.1.3 *Pins*

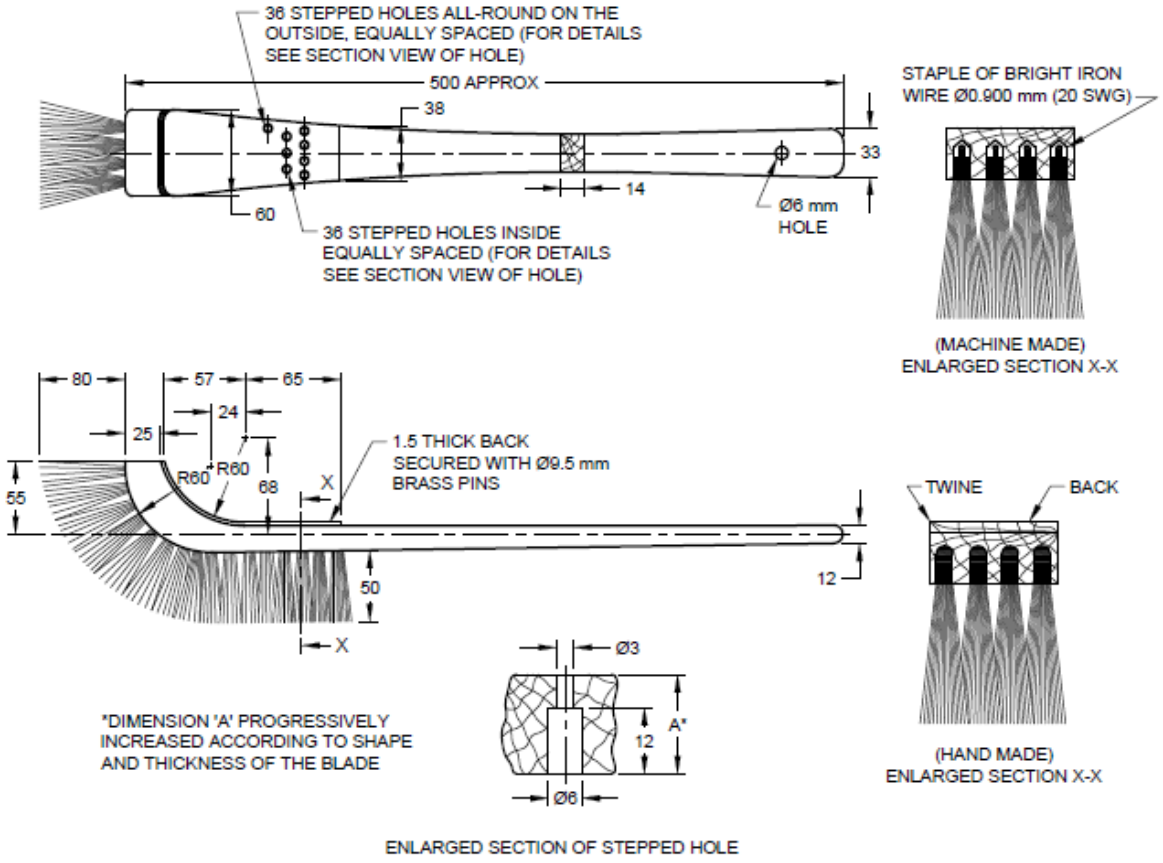
Flat, brass pins 9.5 mm in diameter shall be used for securing.

4.1.4 *Wire*

Brass or copper wire of 0.45 mm to 0.56 mm in diameter shall be used for fastening tufts of filling material.

4.1.5 *Staples*

Bright iron wire staples 0.90 mm in diameter shall be used.



All dimensions in millimetres

FIG. 1 BRUSH, (I) CLEANING TANK, AND (II) COMMODE AND LAVATORY

4.2 Dimensions and Tolerances

4.2.1 The brushes shall conform to the dimensions given in Fig. 1.

4.2.2 The tolerance on the linear dimensions shall be as follows:

Nominal Dimension mm	*Tolerance* mm
Up to 15	± 0.5
Over 15 but below 40	± 1.0
40 and above	± 1.5

4.2.3 A tolerance of ± 0.8 mm shall be allowed on the diameter of the tuft holes.

4.3 Manufacture

4.3.1 The brushes shall generally conform to the shape and design as shown in Fig. 1.

4.3.2 *For Hand-Made Brushes*

The back shall be properly prepared to fit snugly with the curved head portion of the hand-made brushes. It shall completely cover the visible wire fastening on the back of the brush head.

4.3.3 The filling material fibres shall be doubled in the form of knots, and shall be securely set to the bottom of the tapered knot-holes to give the shape of the brush head as shown in Fig. 1.

4.3.3.1 The tufts of filling material shall be further secured by brass or copper wire through the loops formed by doubling of filling material fibres.

4.3.3.2 *For machine-made brushes*

The tufts of filling material shall be cross-stapled and securely set to the bottom of the knot-holes by machine to give the shape of the brush as shown in Fig. 1.

4.4 Workmanship and Finish

4.4.1 The head and the handle of the brush shall be smoothly finished and suitably painted with a 5 percent solution of copper naphthenate (*see* IS 1078) in petroleum hydrocarbon solvent 60/80 (*see* IS 1745).

4.4.2 The tufts of filling material shall be as free from short fibres as per the approved sample.

4.4.3 In general workmanship and finish, the brushes shall match the approved tender sample.

4.5 Tests

4.5.0 The brushes shall satisfy the following tests.

4.5.1 *Pull Test*

The tufts of filling material shall not pull out when subjected to a straight pull between thumb and finger grip.

4.5.2 *Weight of Filling Material Per Finished Brush*

Unfasten tufts by removal of wire. Determine the total weight of filling material.

4.5.2.1 The total weight of filling material per brush shall be 75 g. A tolerance of ± 5 percent shall be allowed in the weight of the filling material provided the average weight of the filling per brush in any lot is as specified.

5 MARKING

5.1 Unless otherwise agreed to between the indentor or inspection authority and the supplier, each brush shall be legibly and indelibly marked or stamped with the manufacturer's name or recognized trademark, if any, and the year of manufacture.

5.1.1 *BIS Certification Marking*

The product may also be marked with the Standard Mark.

5.1.2 The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed there under, and the products may be marked with the Standard Mark.

6 SAMPLING

6.1 The supplier shall submit three identical tender samples of brushes for approval.

6.2 The indentor or the inspection authority shall retain one of the three approved tender samples against each item till the completion of the order.

6.3 Representative samples for test shall be drawn as prescribed in Annex B.

ANNEX A
(*Clause* 4.1.2.1)

SPECIES OF TIMBER FOR THE MANUFACTURE OF BACK AND HANDLE OF BRUSH, (i) CLEANING TANK, AND (ii) COMMODE AND LAVATORY

A-1 The following species of timber arc approved for the manufacture of back and handle of brushes, (i) cleaning tank, and (ii) commode and lavatory:

TRADE NAME		BOTANICAL ORIGIN
Roman	*Devanagari*	
Aini	ऐनी	*Artocarpus hirsuta* Lamk., fam. Moraceae
Banati	बनाती	*Lophopetalum wighianum* Arn., fam. Celastraceae
Badam	बादाम	Prunus Amygdalus Batsch, fam Rosaccac
Bijasal	बीजासाल	*Pterocarpus marsupium* Roxb., fam. Magnciliaceae
Champak	चम्पक	*Michelia champaca* Linn., fam. Magnoliaceae
Chickrassi	चिकरसी	*Chukrasia tabularis* A.Juss., fam. Meliaceae
Dhaman	धामन	*Guswia ilifolia* Vahl., fam. Tiliaceae
Gamari (Gumhar)	गमरी (गुम्हार)	*Gmelia arborea* L., fam. Verbenaceae
Haldu	हल्दु	*Adina cordifolia* Hook f. fam. Rubiaceae
Kaim	कैम	*Mitragyna parvifolia* (Roxb.) Korth. syn. *Stephegyne parvifolia* Korth., fam. Rubiaceae
Kanju	कांजू	*Holopteiea integrifolia* (Roxb.) Planch fam Ulmaceae
Kathal	कटहल	*Artocarpus heterophyllus* Lamk. Syn. A.
Kuthan	कूथन	*Hymenodictyon excelsum* Wail, fam. Rubiacae
Lambapatti	लम्बापट्टी	*Planchonella longipetiolatum* H.J. Lam., syn. *Sideroxylon longipetiolatum* King and Prain, fam Sapotaceae
Aam (Mango)	आम	*Mangifera indica* Linn. fam. Anacardiaceae
Nim-Chameli	नीम - चमेली	*Millingtonia hortensis* Linn. F. fam.,Bignoniaceae
Kodapalai (Piney)	कोडापलाई (पाइनी)	*Kingiodendron pinnatum* Harms, syn. *Hardwickla pinnata* Roxb., fam. Leguminosae
Toon	तून	*Toona ciliata* Roem., syn. *Cedrela toona* Roxb., fam. Meliaceae

ANNEX B
(*Clause* 6.3)

SAMPLING OF BRUSHES AND CRITERIA FOR CONFORMITY

B-1 SCALE OF SAMPLING

B-1.1 Lot

In any consignment, all the brushes of the same quality 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.

B-1.1.1 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 (2) and (3) of Table 1.

B-1.1.2 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; and

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 1.

Table 1 Scale of Sampling
(*Clauses* B-1.1.1 and B-1.1.2)

Sl No.	No. of Brushes in the lot	No. of Brushes to be Selected
	N	**n**
(1)	(2)	(3)
i)	Up to 10	2
ii)	11 to 25	3
iii)	26 to 50	4
iv)	51 to 100	5
v)	101 to 150	6
vi)	151 to 300	7
vii)	301 to 500	8

B-2 CRITERIA FOR CONFORMITY

B-2.1 For declaring the conformity of the lot to the requirements of this specification, all the brushes selected according to **B-1.1.2** shall satisfy the relevant requirements given in **4**.

NOTE — For description of filling material (*see* **4.1.1**) and workmanship and finish (*see* **4.4**), the brushes selected according to **B-1.1.2** shall be matched with the approved tender sample, be suitably stamped and sealed by the indentor or the inspection authority and the supplier and kept at a place agreed to between them.

ANNEX C
(*Clause* 4.1.2.2)

DETERMINATION OF MOISTURE CONTENT OF TIMBER USED IN BRUSH, (i) CLEANING TANK, AND (ii) COMMODE AND LAVATORY

C-1 TEST SPECIMEN

C-1.1 The entire block used in brushes, cleaning tank and commode and lavatory, may form the test specimen for the determination of moisture content, or a coupon cut from the test specimen may, as well, be used for moisture content determination. When for any reason additional determination of moisture content is required, separate samples shall be prepared from the sample material as is 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.

C-2 PROCEDURE

C-2.1 Weigh accurately each test specimen. This specimen shall then be dried in a ventilated oven at a temperature of (105 ± 2) °C until the weight becomes constant between two successive weighings made at an interval of not less than one hour.

C-3 CALCULATION

C-3.1 Moisture content, expressed as a percentage of the oven-dry mass

$$= 100 \times \frac{W_1 - W_0}{W_0}$$

where

W_1 = initial mass in g of the test specimen; and

W_0 = oven-dry mass in g of the test specimen.

ANNEX D
(*Foreword*)

COMMITTEE COMPOSITION

Brushware, Polishes, Lac and Lac Products Sectional Committee, CHD 23

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