BUREAU OF INDIAN STANDARDS

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भारतीय मानक मसौदा

जूता पॉलिश करने वाले ब्रश — विशिष्टि

(आई एस 3009 का चौथा पुनरीक्षण)

Draft Indian Standard

BRUSHES, SHOE POLISHING — SPECIFICATION

(Fourth Revision of IS 3009)

ICS 61.060; 97.180

Brushware, Polishes, Lac, Lac Products Sectional Committee, CHD 23	Last Date for Comments: **09 October 2025**

FOREWORD

(*Formal clause will be added later*)

The brush, shoe polishing, as its name denotes, is used for polishing of shoe, leather, etc.

This standard was originally issued in 1964 and covered the requirements of shoe polishing brushes of two grades, namely, Grade 1 'Bristle filled brushes' and Grade 2 'Horse-tail hair filled brushes'. Since cow-tail hair was also being used extensively for shoe polishing brushes, the committee decided to authorize the use of cattle hair (both cow-tail and horse-tail hair) during the first revision of this specification. The method for determining the moisture content of timber was also incorporated. During the second revision in 1993, use of cow-tail hair as filling materials for Grade 2 brushes was permitted since horse hair is scantly available, the moisture content of timber was increased, mild steel nails and galvanized wire replaced brass nails and wire, number of tuft holes and tolerance to the linear dimensions were increased and length of cow-tail hair was decreased. During the third revision in 2002, the requirements of approved sample were deleted, use of HDPE/LDPE/FRP was incorporated along with the

timber to check deforestation. Shelf-life of the brushes was also incorporated. Total mass of the filling material, and the requirements on total length of cow-tail hair were modified.

In this revision the following changes have been made:

a) The grade clause has been modified by replacing the 'grades' with 'types' and an additional type has been introduced for filament-filled brushes;
b) The filling material requirements have been modified to include Type 3;
c) A new clause for 'approved tender sample' has been added under the terminology;
d) A new requirement for the thickness of filaments has been introduced under dimensions;
e) The pull test requirement has been modified, and a new test method for its determination has been introduced as Annex D 'Determination of Pull Strength';
f) The mass of filling material per finished brushes has been modified according to different types;
g) Naphthalene balls as given in IS 539 has been added in clause 5.8;
h) The marking clause has been updated;
j) The amendments issued to the previous version of the standard have been suitably incorporated; and
k) The reference clause has been updated

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 : 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.

Draft Indian Standard

BRUSHES, SHOE POLISHING — SPECIFICATION

(*Fourth Revision*)

1 SCOPE

This standard prescribes requirements and methods of sampling and test for brushes, shoe polishing.

2 REFERENCES

The standards listed in Annex A contain provisions which through reference in this text, constitute provisions of and necessary adjuncts to this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements bases on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated in Annex A.

3 TERMINOLOGY

For the purpose of this standard, the definition given in IS 707 and 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 TYPES

4.1 Brushes, shoe polishing shall be of three types, namely:

a) Type 1 — Bristles filled brushes;
b) Type 2 — Cow or buffalo-tail hair filled brushes; and
c) Type 3 — Filament filled brushes.

5 REQUIREMENTS

5.1 Materials

5.1.1 *Filling Material*

5.1.1.1 *For Type 1*

Semi-stiff bristles of natural colour (*see* IS 1844) shall be used. They shall be a close match to those used in the approved tender sample.

5.1.1.2 *For Type 2*

Cow-tail hair clean, free from dust and other extraneous matter and complying with tests under **5.4** and **5.4.1** shall be used.

5.1.1.3 *For Type 3*

Man-made fibres shall be made from virgin polypropylene (PP) or polyethylene terephthalate (PET)

5.1.2 *Back and Board*

5.1.2.1 The material for board/back may be either timber or any of the alternate material to timber like HDPE/ LDPE/FRP/Polypropylene.

5.1.2.2 In case of timber, any of the timber species listed in Annex B shall be used.

5.1.2.3 The timber shall be reasonably straight grained and well-seasoned to a moisture content not exceeding 20 percent when tested according to IS 11215 or according to the method prescribed in Annex C. However, in case of dispute, the oven drying method shall be used.

5.1.2.4 The timber shall be free from brashness, any kind of biological or non-biological deterioration, insect attack, centre heart (pith), knots (except live pin knots), crack warp or other defects which may reduce the life of the brush or affect its utility.

5.1.3 *Nails*

The securing nails shall be of mild steel and of size minimum 10 mm long and minimum 1.2 mm in diameter. Suitable adhesive may be used if back and board are manufactured from HDPE/LDPE/FRP/Polypropylene for fixing back and board.

5.1.4 *Wire*

Galvanized iron wire of minimum 0.38 mm in diameter for fastening tufts of filling material in case of wire-drawn brushes, shall be used.

5.1.5 *Staples*

In the case of staple-set brushes, bright iron or copper coated mild steel wire of minimum 0.70 mm in diameter shall be used.

5.2 Manufacture

5.2.1 The brush shall generally conform to the shape and design as shown in Fig. 1.

5.2.2 The back and board shall be manufactured from the same material and in case of timber from the same species of timber.

5.2.3 The board shall be drilled with 112 ± 2 tuft holes of the shape and size as shown in Fig. 1.

5.2.4 *For Wire-Drawn Brush*

The tufts of hair shall be firmly drawn into the tuft holes by means of galvanized iron wire and thoroughly bottomed so that they cannot be subsequently knocked back. The back shall be secured with minimum 8 mild steel nails as shown in Fig. 1 in such a manner that they do not foul the wire or the filling materials.

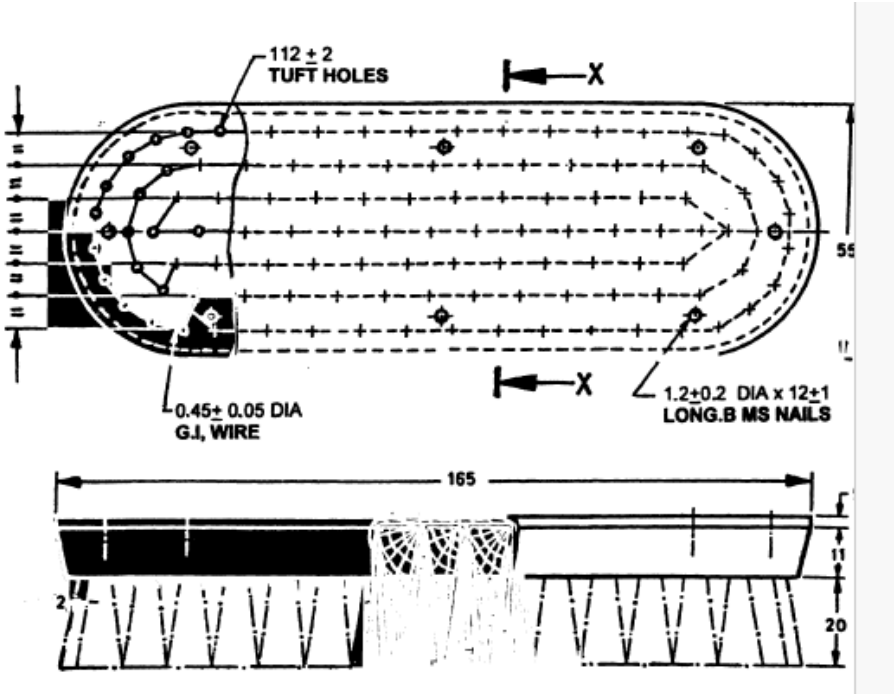
5.2.5 *For Staple-Set Brushes*

No back is required. The tufts of the filling material shall be cross-stapled and securely slogged, set to the bottom of the tuft holes to give the shape of the brush as shown in Fig. 1.

5.3 Dimensions and Tolerances

5.3.1 *Dimensions*

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



All dimensions in millimetres.

FIG. 1 BRUSH, SHOE POLISHING

5.3.1.1 *Thickness of Filaments*

The thickness of PP filaments to be used in the polishing brush shall be 0.12 mm and in case of PET filaments, the thickness shall be 0.18 mm.

5.3.2 *Tolerances*

The tolerance on the linear dimensions shall be as follows:

Sl. No	*Nominal Dimension* mm	*Tolerance* mm
(1)	(2)	(3)
i)		
ii)	Up to 15	± 1.0
iii)	Over 15 but below 40	± 2.0
iv)	40 and above	± 3.0

5.3.2.1 A tolerance of ± 1.0 mm shall be allowed on the diameter of the tuft holes.

5.3.2.2 *Length of filling material*

The tolerances specified in **5.3.2** shall not apply to filling material for which minimum length has been prescribed in **5.4**.

5.4 Length of Filling Material

The total length of 75 percent of the filling materials used, when tested by pulling out ten tufts from the finished brush shall be not less than 55 mm.

5.4.1 *Identification of Filling Material*

In case of dispute regarding the origin of filling material, microtomy through microscopic examination and comparison of cross-sections of the filling material shall be resorted to. The section thus prepared shall be compared against Fig. 7, 8 and 9 of IS 8592.

5.5 Pull Test

The force required for pulling out an individual tuft shall not be less than 2 kg for 1 min when tested according to the method given in Annex D.

5.6 Mass of Filling Material for Finished Brush

5.6.1 Separate the back after removal of the securing nails in the case of hand-made brushes. Unfasten the tufts by removal of fastening wire of staples, as the case may be, and pull out all the filling material. Determine the total mass of the filling material, using suitable weighing balance.

5.6.2 Minimum mass of filling material per brush shall be 30 g, 25 g and 30g for Type 1, Type 2 and Type 3 brushes respectively. The average mass of the filling material per brush shall be assessed by taking the average mass of filling material of 3 brushes drawn at random from the tendered quantity not exceeding 300 brushes and 6 brushes exceeding 300 brushes.

5.7 Workmanship and Finish

5.7.1 The back of the brush shall be finished smooth and suitably polished or painted, in case of timber.

5.7.2 In general workmanship and finish, the brush shall match the approved tender sample. (*see* **3.1**)

5.8 Preservation

The bristles of the brushes shall be liberally dusted, before packing with a mixture of 5 parts (by mass) of Lindane 6.5 percent DP (*see* IS 14834) and 95 percent by mass of French chalk (*see* IS 380). Alternatively, naphthalene balls (*see* IS 539) shall be used in the packing box for the brushes.

5.9 Shelf-Life

The brushes shall have a shelf-life of one year from the month of manufacturing, provided proper storage conditions are used and adequate precautions are taken for preserving them as given under IS 3451 (Part 2).

6 PACKING AND MARKING

6.1 Packing

6.1.1 The brushes shall be suitably packed, as agreed to between the indentor or inspection authority and the supplier.

6.2 Marking

6.2.1 Each brush shall be legibly and indelibly marked or stamped with the following:

a) Type of the brush;

b) Name of the manufacturer or trade-mark, if any;

c) Month and year of the manufacture;

d) Any other information, as agreed to between the purchaser and the supplier; and

e) The following shall appear in the final package.

6.2.1.1 A declaration stating that hairs of banned animals under *Wild Life Protection Act* are not used.

6.2.3 *BIS Certification Marking*

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 thereunder, and the products may be marked with the Standard Mark.

7 SAMPLING

7.1 Tender Samples

7.1.1 The supplier shall submit four identical tender samples of brushes of each denomination for approval.

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

7.2 The method of drawing representative samples of the brushes and the criteria for conformity shall be as prescribed in Annex E.

8 Care and Maintenance

Guidelines on care and maintenance of brushes are given in IS 3451 (Part 2).

ANNEX A

(*Clause* 2)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*
IS 380 : 2023	French chalk, technical — Specification (*third revision*)
IS 539 : 1974	Specification for naphthalene (*second revision*)
IS 707 : 2011	Timber technology and utilization of wood, bamboo and cane — Glossary of terms (*third revision*)
IS 1844 : 1993	Bristles — Specification (*second revision*)
IS 3451 (Part 2) : 2024	Care and maintenance of brushes — Code of practice: Part 2 Brushes other than pan-set brushes (*first revision*)
IS 5060 : 2024	Brushware industry — Glossary of terms (*first revision*)
IS 8592 : 1977	Methods for identification of brush filling materials of animal origin
IS 11215 : 1991	Moisture content of timber and timber products - Methods for determination (*first revision*)
IS 14834 : 2000	Lindane dusting powder — Specification

ANNEX B

(*Clause* 5.1.2.2)

SPECIES OF TIMBER FOR MANUFACTURE OF WOODEN PORTION OF BRUSH

B-1 The list of species of timber approved for the manufacture of wooden portion of brushes, shoe polishing, is given below:

Trade Name		***Botanical Origin***
Roman	**Devanagari**	
Aini	ऐनी	*Artocarpus hirsutus Lamk.*, fam. Moraceae
Banati	बनाती	*Lophopetalum wightianum* Arn., fam. Celastraceae
Bijasal	बीजसाल	*Pterocarpus marsupium* Roxb., fam. Magnciliaceae
Jam (Black Berry)	जैम	*E. cymosa* Roxb., Fl.Ind.
Champak	चम्पक	*Michelia champaca* Linn., fam. Magnoliaceae
Chickrassi	चिकरासी	*Chukrasia tabularis* A. Juss., fam. Meliaceaed
Dhaman	धामन	*Grewia tiliifolia* Vahl., fam. Tiliaceae
Gamari (Gumhar)	गमारी (गुम्हार)	*Gmelina arborea* Roxb., L., fam. Verbenaceae

Krishnachura (Gold Mohar)	कृष्णचूरा	*Poinciana pulcherrima*, Roxb. FI. Ind.
Haldu	हल्दू	*Adina cordifolia* Hook f. fam. Rubiaceae
Kadam	कदम	*Anthocephalus chinensis* *Nauclea Cadamba*, Roxb. FI. Ind. i; *Sarcocephalus Candamba*, Kurz for FI.
Kaim	कैम	*Mitragyna parvifolia* (Roxb.) Korth. syn. *Stephegyne parvifolia* Korth, fam. Rubiaceae
Kanju	कांजू	*Holoptelea integrifolia* (Roxb.) Planch fam. Ulmaceae
Karanja	करांजा	*Galedupa indica Lam*; Roxb. FI. Ind.
Kathal	कटहल	*Artocarpus heterophyllus* Lamk. Syn. A *integrifolia Auct*., fam. Moraceae
Kuthan	कूथन	*Hymenodictyon excelsum* wail, fam. Rubiaceae
Lambapatti	लांबापत्ती	*Planchonella longipetiolata* H.J. Lam., syn. *Sideroxylon longipetiolata* King and Prain, fam. Sapotaceae
Aam (mango)	आम	*Mangifera indica* Linn., Fam. Anacardiaceae
Mahogini	महगनी	*Swietenia* spp.
Nim-Chameli	नीम-चमेली	*Millingtonia hortensis* Linn. F. fam. Bignoniaceae
Kodapalai (piney)	कोडपलाई (पिने)	*Kingiodendron pinnatum* Harms, syn. *Hardwickia pinnata* roxb., fam. Leguminosae
Saibabla	सैबाबला	*Mimosa Arabica* Roxb. Fl. Ind.
Sirish	सिरिश	*Albizia Chinensis* *Mimosa sirisa* Roxb. Fl. Ind.
Toon	तून	*Toona ciliata* Roem., syn. *Cedrela toona* Roxb., fam. Meliaceae

ANNEX C

(*Clause* 5.1.2.3)

DETERMINATION OF MOISTURE CONTENT OF TIMBER USED IN BRUSHES, SHOE POLISHING

C-1 TEST SPECIMEN

The entire block used in the brushes, shoe polishing may form the test specimen for 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 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 APPARATUS

C-2.1 Air Oven — Suitable to control the temperature of (105 ± 2) °C.

C-2.2 Weighing Balance

C-3 PROCEDURE

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

C-4 CALCULATION

The moisture content, expressed as a percent of the dry mass, is given by the formula:

$$\text{Moisture content, percent} = \frac{W_1 - W_0}{W_0} \times 100$$

where

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

K = dry mass, in g, of the test specimen.

ANNEX D

(*Clause* 5.5)

DETERMINATION OF PULL STRENGTH

D-1 APPARATUS

A simple instrument as shown in Fig. 2 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 wooden plate (*B*). A tubular tuft holder (*C*) is hung on the hook of dial gauge. A clamp for holding the shoe blacking 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 to NPL.

NOTE — Manufacturer may use sophisticated electronic instrument available in market to determine the pull strength.

D-2 PROCEDURE

D-2.1 Fix a brush with bristles in upward direction in the brush holder with the help of screw (*G*).

D-2.2 Select 10 tufts at random and insert al 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 tuft to enter in to the hole. Fix the bristles firmly with the help of screw (*D*).

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

D-2.4 Move down the brush holder slowly with screw (*G*) watching the pointer on dial carefully till 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 tuft shall not come out of the brush during the test.

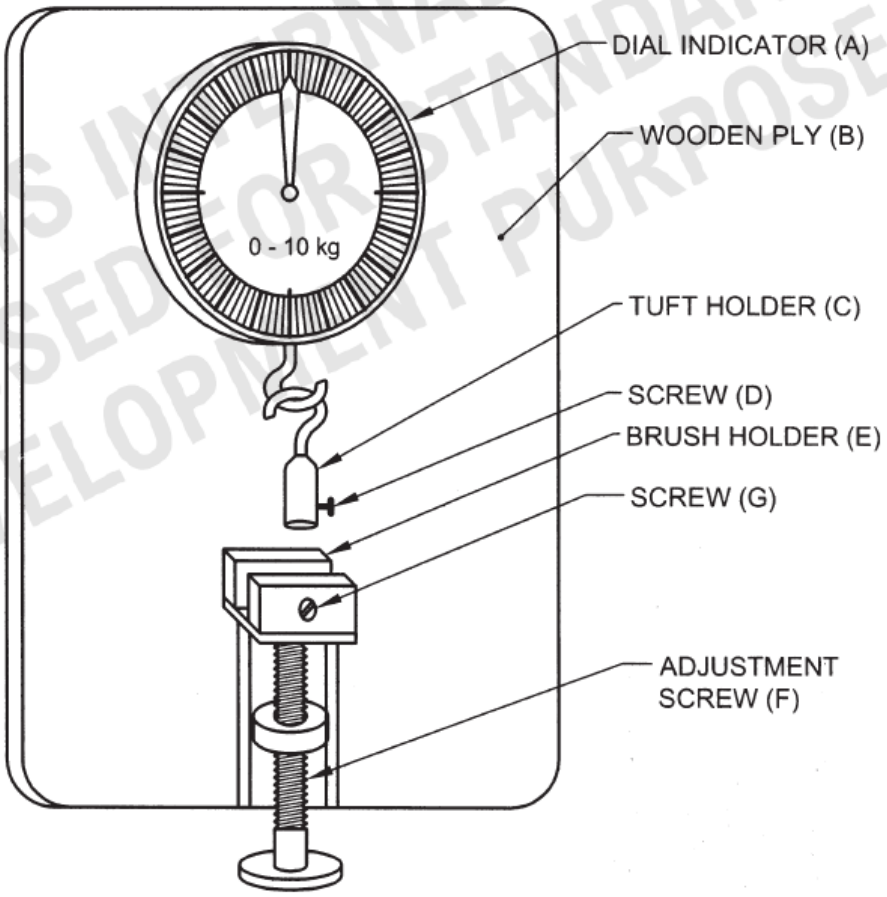


FIG. 2 INSTRUMENT FOR DETERMINATION OF PULL STRENGTH

ANNEX E

(*Clause* 7)

SAMPLING AND CRITERIA FOR CONFORMITY

E-1 METHOD OF SAMPLING

E-1.1 Lot

In any consignment, all the brushes of the same size and quality shall be divided into groups of 1 000 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.

E-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 Table 1.

E-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, 3 ,... 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 and **5.6.2**.

Table 1 Scale of Sampling

(*Clauses* E-l.1.1 and E-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
viii)	501 to 750	9
ix)	751 to 1 000	10

E-2 NUMBER OF TESTS

Tests for the characteristic given under **5.1** to **5.7** shall be conducted on all the individual brushes selected according to **E-1.1.2**.

E-3 CRITERIA FOR CONFORMITY

For declaring the conformity of the lot to the requirements of this specification, all the brushes selected according to **E-1.1.2** shall satisfy the relevant requirements given under **5.1** to **5.5** and **5.7**, and average mass of the filling material shall satisfy the relevant requirement given under **5.6**.

NOTE— For description of bristles (see **5.1.1.1**) and workmanship and finish (*see* **5.7**), the brushes selected according to **E-1.1.2** shall be matched with the approved tender sample which is suitably stamped and sealed by the purchaser or the inspection authority and kept at a place agreed to between the two.