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IS 11100 (1984): sweeping brooms [CED 9: Timber and Timber Stores]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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*Indian Standard*

SPECIFICATION FOR SWEEPING BROOMS

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

# *Indian Standard*

## SPECIFICATION FOR SWEEPING BROOMS

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## *Indian Standard*

### SPECIFICATION FOR SWEEPING BROOMS

#### 0. FOREWORD

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 25 April 1984, after the draft finalized by the Timber Stores Sectional Committee had been approved by the Civil Engineering Division Council.

**0.2** Sweeping brooms are required in very large quantities annually by the Ministry of Defence, besides other consumer organizations. This standard has been prepared to provide guidance in the manufacture and inspection of this store item.

**0.3** In the formulation of this standard due weightage has been given to international co-ordination among the standards and practices prevailing in different countries in addition to relating it to the practices in the field in this country.

**0.4** 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\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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#### 1. SCOPE

**1.1** This standard covers the requirements of sweeping brooms manufactured from bamboo strips.

#### 2. TERMINOLOGY

**2.1** For the purpose of this standard, the definitions given in IS : 7344-1974† and IS : 707-1976‡ shall apply.

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\*Rules for rounding off numerical values (*revised*).

†Specification for bamboo tent poles.

‡Glossary of terms applicable to timber technology and utilization (*second revision*).

### 3. MATERIALS

**3.1 Bamboo Strips** — The strips shall be split from adequately seasoned bamboos. These shall be free from Ghoon (*Dinoderus*) infestation, any kind of decay (rot), charring and any other defect which is likely to reduce the life of the brooms.

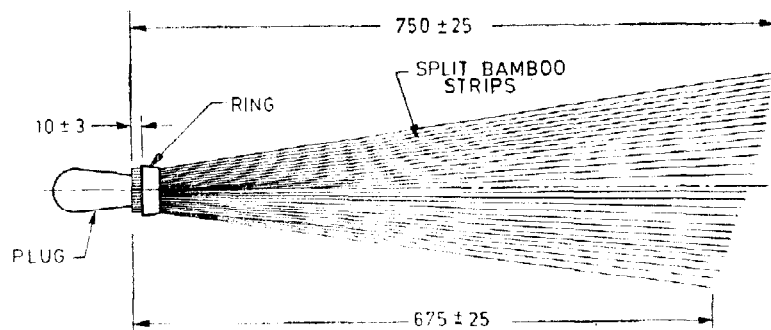
**3.2 Plug** — The plug shall be manufactured from any of the species of timber given in Appendix A.

**3.2.1** The timber used shall be fairly straight-grained and shall be seasoned to a moisture content not exceeding 12 percent. It shall be free from cent re-heart (pith), any kind of decay (rot), live insect attack, cracks, splits, knots and warp (except live pin knots).

**3.2.2 Ring** — The ring shall be manufactured from mild steel sheet,  $1.0 \pm 0.1$  mm thick conforming to IS : 513-1973\*.

### 4. MANUFACTURE

**4.1** The broom shall be manufactured to the shape and design as shown in Fig. 1.



All dimensions in millimetres

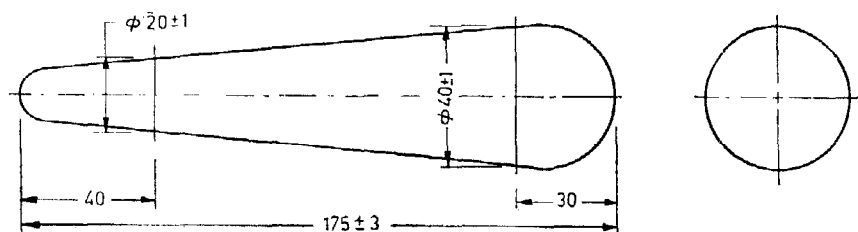
FIG. 1. SWEEPING BROOM — SHAPE AND DESIGN

**4.2** The bamboo strips shall be cut smooth and tapered. These shall then be treated by complete immersion in neat, undiluted creosote oil conforming to IS : 218-1983† for a minimum period of 5 minutes at room temperature and allowed to dry.

\*Specification for cold rolled carbon steel sheet (second revision).

†Specification for creosote oil for use as wood preservative (second revision).

4.3 The plug shall be machined to the shape as shown in Fig. 2. The plug, if manufactured from sapwood or any other timber marked with asterisk in Appendix A, shall be treated by complete immersion in neat, undiluted creosote oil conforming to IS : 218-1983\* for a minimum period of 15 minutes at room temperature and allowed to dry.

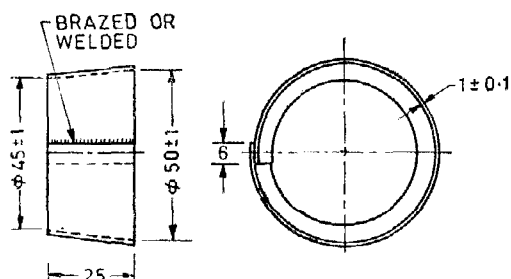


All dimensions in millimetres

FIG. 2. DETAIL OF PLUG

NOTE — Any other suitable wood preservative for the timber component may be used, subject to agreement between the purchaser and the supplier.

4.4 The ring shall be manufactured to shape as shown in Fig. 3 and the joint shall be soundly brazed or welded. Alternatively, the ring may be manufactured from electric resistance welded (ERW) steel tube. Before fitting, the ring shall be thoroughly coated with temporary corrosion preventive fluid, hard film, solvent deposited conforming to IS : 1153-1975† and allowed to dry.



All dimensions in millimetres

FIG. 3. DETAIL OF RING

\*Specification for creosote oil for use as wood preservatives (second revision).

†Specification for temporary corrosion preventive fluid, hard film, solvent deposited (first revision).



**4.5** A total of  $1\,000 \pm 50$  strips shall be bundled together in such a manner that the number of modular sections in any one 15 mm length of finished broom does not exceed 50. The strips taper from base to apex, that is, towards the sweeping end. The ring shall be placed over the strips so as to allow  $10 \pm 3$  mm protrusion of the strips at the plug end. The plug shall then be properly driven in through the strips so as to firmly hold them in the ring as shown in Fig. 1.

**4.6** The bamboo strips shall be trimmed as shown in Fig. 1.

## 5. DIMENSIONS, MASS AND TOLERANCES

**5.1 Dimensions** — The broom shall conform to the dimensions as shown in Fig. 1.

**5.2 Mass** — Each broom shall contain 680 to 850 g of the strips.

**5.3 Tolerances** — The tolerances on dimensions shall be as shown in Fig. 1, 2 and 3. Where tolerances on dimensions are not specified, normal manufacturing tolerances shall be permissible.

## 6. WORKMANSHIP AND FINISH

**6.1** The plug shall be finished smooth all over. The ring shall be free from sharp edges and burrs. The brazing or welding shall be sound and continuous.

## 7. SAMPLING

**7.1** The method of drawing representative samples of brooms shall be as prescribed in Appendix B.

## 8. INSPECTION AND LABORATORY TESTING

**8.1 Dimensional/Non-Destructive/Visual Inspection** — Samples shall be drawn for dimensional/non-destructive/visual inspection in accordance with Table 1 and shall be inspected to detect the major and minor defects specified in 8.1.1 and 8.1.2.

### 8.1.1 Major Defects

- a) Incorrect shape and design of broom (*see 4.1*),
- b) Excessive nodular sections in any of 15 mm length of finished broom (*see 4.5*),
- c) Tapered ends of strips not protruding outside (*see 4.5*),

- d) Sweeping end of the broom not formed as shown in Fig. 1, and
- e) Bamboo strips not tapered (*see* Fig. 1).

**8.1.2 Minor Defects**

- a) Minor dimensional variations (*see* Fig. 1, 2 and 3), and
- b) Workmanship and finish (*see* 6).

**8.1.3** If the quality of the lot indicates conformity to the requirements of **8.1.1** and **8.1.2** in accordance with the criteria laid down in **B-4**, further sampling for laboratory testing shall be carried out, otherwise the lot shall be rejected.

**8.2 Laboratory Testing** — Samples for laboratory testing drawn in accordance with Table 2 shall be tested to detect the major and minor defects specified in **8.2.1** and **8.2.2**.

**8.2.1 Major Defects**

- a) Use of infected (decayed) bamboo strips (*see* 3.1),
- b) No. of strips in a broom beyond the specified limits (*see* 4.5),
- c) Bamboo strips shorter than the specified length (*see* Fig. 1),
- d) Mass of bamboo strips beyond the specified limits (*see* 5.2), and
- e) No evidence of preservative treatment (*see* 4.2 and 4.3).

**8.2.2 Minor Defects** — The defects are same as those specified in **8.1.2**.

**8.2.3** The lot shall be accepted if the criteria of conformity laid down in **B-4** is satisfied.

**9. MARKING**

**9.1** Each broom shall be legibly and indelibly marked on the plug with the following information :

- a) Manufacturer's name or recognized trade mark, if any ; and
- b) Year of manufacture.

**9.2** Brooms may also be marked with the ISI Certification Mark.

**NOTE** — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution ( Certification Marks ) Act and the Rules and Regulations made thereunder. The ISI mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

## APPENDIX A

( Clauses 3.2 and 4.3 )

<i>Standard Trade Name</i>	<i>Botanical Name</i>
*Babul	<i>Acacia nilotica</i> (Syn. <i>A. arabica</i> )
Bijasal	<i>Pterocarpus marsupium</i>
Chickrassy	<i>Chukrasia velutina</i> (Syn. <i>C. Tabularis</i> )
Dhaman	<i>Grewia tiliifolia</i>
Gardenia	<i>Gardenia</i> spp.
*Haldu	<i>Adina cordifolia</i>
Hollock	<i>Terminalia myriocarpa</i>
Hopea	<i>Hopea</i> spp. (other than <i>Hopea odorata</i> )
Kardhai	<i>Anogeissus pendula</i>
*Kanju	<i>Holoptelea integrifolia</i>
*Kaim	<i>Mitragyna parvifolia</i> (Syn. <i>Stephegyne parvifolia</i> )
Laurel	<i>Terminalia alata</i> (Syn. <i>T. coriacea</i> ; <i>T. crenulata</i> )
Mahua	<i>Madhuca tangifolia</i>
Nimi-chambeli	<i>Millingtonia hortensis</i>
Padauk	<i>Pterocarpus dalbergioides</i>
Sal	<i>Shorea robusta</i>
Sissoo	<i>Dalbergia sissoo</i>
*Toon	<i>Toona ciliata</i> (Syn. <i>Cedrela toona</i> )
Teak	<i>Tectona grandis</i>

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\*These species of timber before use shall be given treatment as specified under 4.3.

## APPENDIX B

### ( Clauses 7.1, 8.1.3 and 8.2.3 )

#### SAMPLING OF SWEEPING BROOMS

##### B-1. LOT

**B-1.1 Formation of Lot** — The consignment shall be visually inspected to determine its homogeneity with respect to nature, size, colour, source and year of manufacture. If it is homogenous it shall be treated as one lot. If not, it shall be segregated by the supplier into separate groups so that each group, which is homogenous within itself, forms a lot.

**B-1.2** The supplier shall arrange the units of the homogenous lot in such a way that all the units are easily accessible for drawing samples from its any portion.

##### B-2. SAMPLING PROCEDURE

**B-2.1** Sampling of the broom shall be done by adopting any one appropriate sampling method out of those given in IS : 4905-1968\* so that the samples drawn in accordance with Table 1 and 2, for assessing various quality requirements, are truly representative of the lot.

##### B-3. SCALE OF SAMPLING

**B-3.1** The number of sample units to be drawn for assessing the quality of the store characteristics wise are given in Table 1 and 2.

**TABLE 1 SCALE OF SAMPLING FOR DIMENSIONAL/NON-DESTRUCTIVE/  
VISUAL INSPECTION**  
( Clauses B-2.1 and B-3.1 )

LOT SIZE (N)	SAMPLING PLAN NO.	A.Q.L. 6.5 PERCENT MAJOR DEFECTS	
		n	Ac
2 — 50	1	8	1
51 — 100	2	13	2
101 — 150	3	20	3
151 — 300	4	32	5
301 — 500	5	50	7
501 — 1 000	6	80	10
1 001 — 3 000	7	125	14
3 001 — 10 000	8	200	21
10 001 — 35 000	9	200	21

\*Methods for random sampling.

**TABLE 2 SCALE OF SAMPLING FOR LABORATORY TESTING**( *Clauses B-2.1 and B-3.1* )

Lot Size ( $N$ )	SAMPLING PLAN No.	A.Q.L. 6.5 PERCENT MAJOR DEFECTS	
		$n$	$Ac$
2 — 50	1	2	0
51 — 100	2	8	1
101 — 150	3	8	1
151 — 300	4	8	1
301 — 500	5	8	1
501 — 1000	6	13	2
1001 — 3000	7	13	2
3001 — 10000	8	20	3
10001 — 35000	9	20	3

 $N$  = No. of units in the lot or lot size. $n$  = No. of units in the sample or the sample size. $Ac$  = Acceptance number or criteria of conformity to lot quality; that is, maximum allowable No. of defective in the sample for acceptance of lot. $AQL$  = Acceptance quality level in terms of percentage of defective items.**B-4. CRITERIA FOR CONFORMITY****B-4.1** Any broom which fails to satisfy one or more of the specified quality requirements shall be termed as defective.**B-4.2** All sample units as specified in Table 1 and 2 are to be inspected/ tested irrespective of the rejection number ( $Ac+1$ ) being achieved earlier.**B-4.3** The lot shall be considered conforming to the specified requirements if the number of defective units observed in the sample is not more than the respective acceptance number for each type of requirements.

## INDIAN STANDARDS

### ON

#### TIMBER STORES

##### IS:

- 620-1975 General requirements for wooden tool handles (*third revision*)
- 2133-1980 Wooden tent pins
- 2891-1975 Wooden handles for felling axes and hand axes (*first revision*)
- 2892-1980 Wooden handles for picks and beaters (*first revision*)
- 2893-1980 Wooden handles for adzes (*first revision*)
- 2894-1965 Wooden handles for wood working chisels and gauges
- 2895-1978 Wooden handles for engineer's files and engineer's scrapers (*first revision*)
- 2896-1978 Wooden handles for carpenter's augers (*first revision*)
- 2897-1983 Wooden handles for showels (*first revision*)
- 2922-1975 Wooden tent mallets (*second revision*)
- 3053-1977 Cane baskets for general purposes (*first revision*)
- 3084-1975 Pencil slats (*first revision*)
- 3386-1979 Wooden fence posts (*first revision*)
- 3806-1966 Wooden beaters
- 4435-1967 Wooden ladders and trestles
- 4650-1968 Anvil wooden blocks
- 4953-1973 Wooden handles for hand hammer (*first revision*)
- 5942-1970 Wooden handles for *POWRALLS*
- 6641-1972 Wooden disc for tents
- 6642-1972 Mason mallets
- 6643-1972 Wooden pins for bivouac tent
- 6644-1972 Tinman's mallets
- 6656-1972 Caulking mallets
- 6676-1972 Bossing (plumbers) mallets
- 6729-1972 Wooden paddles
- 7344-1974 Bamboo tent poles
- 7548-1975 Vase for store tent
- 7549-1975 Timber half wrought for sporting rifles
- 7550-1975 Cane basket for ration
- 7850-1975 Wooden boxes for microscope slides
- 8295 (Part I)-1976 Bamboo chicks: Part I Fine
- 8295 (Part II)-1976 Bamboo chicks: Part II Coarse
- 10145-1982 Bamboo supports for camouflaging equipment
- 10499-1983 Wooden toggles