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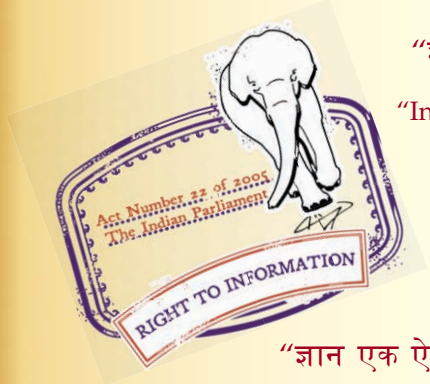

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IS : 5123 - 1969

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Indian Standard

SPECIFICATION FOR TENON AND DOVETAIL SAWS

(First Reprint MARCH 1985)

UDC 621.932.272

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

Gr 3

September 1969

Indian Standard

SPECIFICATION FOR TENON AND DOVETAIL SAWS

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Indian Standard
SPECIFICATION FOR TENON AND DOVETAIL SAWS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 15 May 1969, after the draft finalized by the Hand Tools Sectional Committee had been approved by the Mechanical Engineering Division Council.

0.2 While preparing this standard, assistance has been derived from BS 3159 : Part 2 : 1962 ' Specification for woodworking saws for hand use. Part 2 Tenon and dovetail saws ' issued by the British Standards Institution.

0.3 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 : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard specifies the requirements for tenon and dovetail saws.

2. NOMENCLATURE

2.1 For the purpose of this standard the nomenclature as given in Fig. 1 shall apply.

3. GRADES

3.1 The tenon and dovetail saws shall be of the following four grades:

Grade 1 — A first grade saw for the use of craftsmen.

Grade 2 — A second grade saw for the use of craftsmen.

Grade 3 — A first grade general duty saw.

Grade 4 — A second grade general duty saw.

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

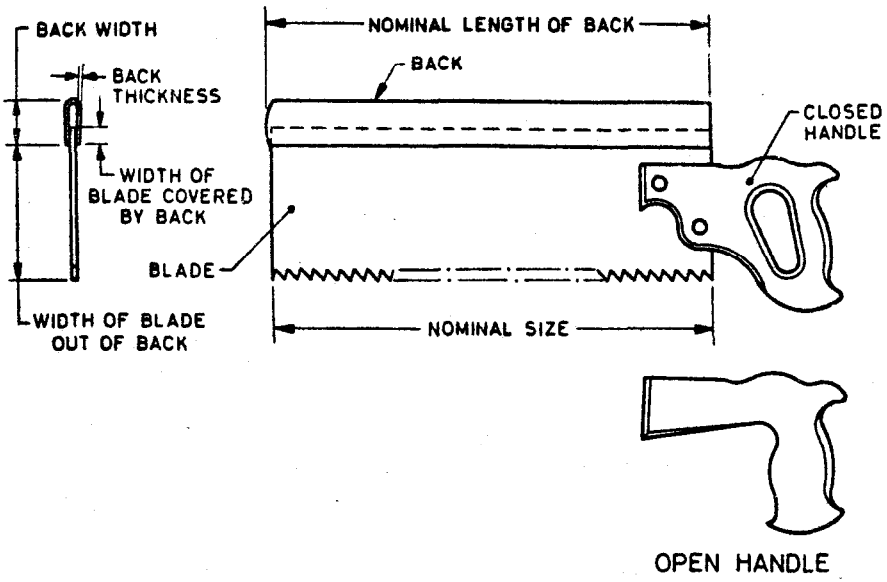


FIG. 1 NOMENCLATURE FOR TENON AND DOVETAIL SAWS

4. MATERIAL

4.1 The saw blades shall be manufactured from a suitable steel having a carbon content of not less than 0·7 percent. Suitable steels for this purpose are T75, T80 and T85 of Schedule VI of IS : 1570-1961* with a maximum sulphur and phosphorus content of 0·05 percent each.

4.2 The backs shall be manufactured from deep drawing steel sheet conforming to Type DD of IS : 513-1963†.

5. HARDNESS

5.1 The saw blades shall be uniformly hardened and tempered to attain a hardness value as follows:

Grade	*Hardness value*
1 & 2	460 to 580 *HV* 5‡
3 & 4	440 to 540 *HV* 5‡

*Schedules for wrought steels for general engineering purposes.

†Specification for cold rolled carbon steel sheets (*revised*).

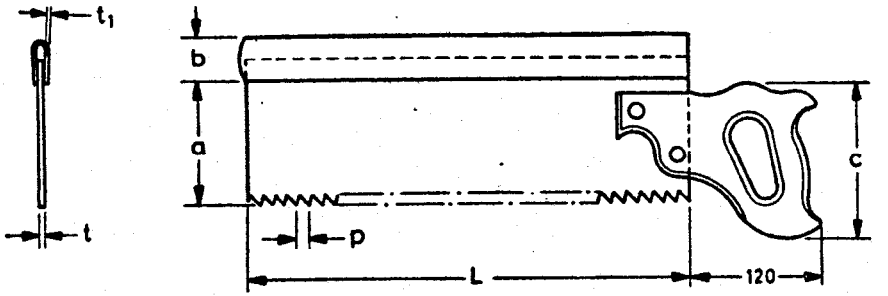
‡*See* IS : 1501-1968 'Method for Vickers hardness test for steel (*first revision*)'.

6. DIMENSIONS

6.1 The main dimensions of the saws shall be as given in Tables 1 and 2.

TABLE 1 DIMENSIONS FOR DOVETAIL SAWS

All dimensions in millimetres.



Nominal Size L	a ±5	b Min	c	t ±0·04	t_1 Min	p	Handle Fastening*	
							Grade 1	Grade 2
200	55	20	110	0·50	2·5	1·5	2 or 3 screws	2 screws

*Dovetail saws shall be available in Grade 1 and Grade 2 only.

7. GENERAL REQUIREMENTS

7.1 Blade — The surface of the blade shall have no hammer marks or other imperfections and shall be polished.

7.2 Backs — Backs shall be uniformly folded and properly closed so as to grip the blade along the whole length. Backs shall be polished or blued over the entire exposed surface of each back.

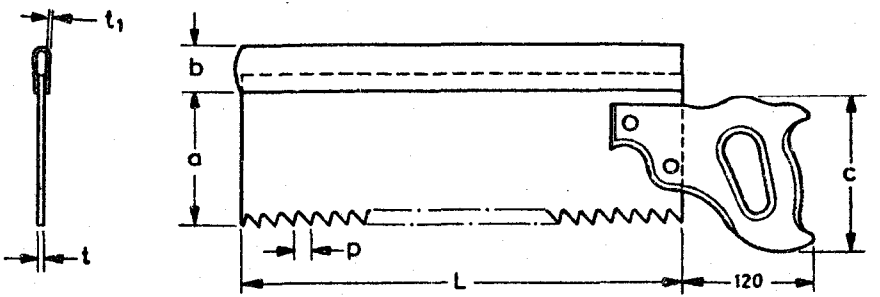
7.3 Handle — The hand grip of both open and closed types of handles shall be so shaped that discomfort is not caused to the hand. The handle shall be centrally slit. The thickness of the handle shall not be less than 20 mm. The handles shall be polished throughout. The devetail saws and 200 mm tenon saws shall be provided with open or closed handles whereas other sizes of tenon saws shall be provided with closed handles. The handles shall conform to the requirements of Class 5 of IS : 620-1965*.

*General requirements for wooden tool handles (*second revision*).

TABLE 2 DIMENSIONS FOR TENON SAWS

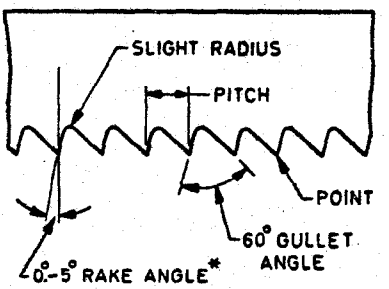
(*Clause* 6.1)

All dimensions in millimetres.



Nominal Size L	*a* ±5		*b* *Min*			*c*	*t* ±0·05		t_1			*p*	Handle Fastening		
	Grade 1	Grades 2, 3 & 4	Grade 1	Grade 2	Grades 3 & 4		Grades 1 & 2	Grades 3 & 4	Grade 1	Grade 2	Grades 3 & 4		Grade 1	Grades 2 & 3	Grade 4
200	60	55	20	20	17	110	0·60	0·65	2·6	2·6	2·3	2	2 or 3 screws	2 screws	2 screws or rivets
250	65	60	20	20	17	110	0·60	0·65	2·6	2·6	2·3	2	2 or 3 screws	2 or 3 screws	2 screws or rivets
300	80	75	25	20	17	110	0·65	0·75	2·9	2·9	2·3	2	3 screws	3 screws	2 or 3 screws or rivets
350	90	85	25	20	17	125	0·75	0·75	2·9	2·9	2·3	2	3 screws	3 screws	2 or 3 screws or rivets

7.4 Teeth — The teeth shall be evenly formed and shall have tooth angles as shown in Fig. 2. The teeth shall be alternately set on either side of the blade. Approximately two-thirds of each tooth measured from the points shall be set, and the method of setting shall be such that the remainder of the blade shall not be deformed. The degree of set on either side shall be equal and shall be not less than 0·25 and not more than 0·5 of the thickness of blade.



*Regardless of variations in the Rake Angle, the Gullet Angle shall remain at 60°.

FIG. 2 DETAIL OF TEETH

7.4.1 Grade 1 tenon saws shall be cross or half cross sharpened, Grade 2 half cross or straight sharpened, Grade 3 straight sharpened and Grade 4 straight sharpened or unsharpened (*see* Appendix A).

7.4.2 Dovetail saws shall be straight sharpened (*see* Appendix A).

8. DESIGNATION

8.1 The saws shall be designated by:

a) commonly used name,
b) grade,
c) nominal size, and
d) number of this standard.

Example:

A grade 1 tenon saw of nominal size 200 mm shall be designated as:

Tenon Saw 1, 200 IS : 5123

9. MARKING

9.1 The saw shall be clearly and indelibly marked with the nominal size, type, grade and the manufacturer's name or the trade-mark. The year of manufacture shall also be marked, if required by the purchaser.

9.1.1 The saws 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. Presence of this 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 during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. 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.

10. SAMPLING

10.1 Unless otherwise agreed to between the supplier and the purchaser the sampling plan and criteria for conformity as given in Appendix B shall be followed.

11. TESTS

11.1 Setting Test — The teeth of all saws shall be capable of being set, without breaking, by reasonable hammer blows on a setting stake, or by a suitable, correctly adjusted saw set. Two-thirds of each tooth, measured from the point shall be set for this test.

11.2 Straightness Test — When checked with the aid of a straight edge the back and blade shall be visually straight and free from twist.

11.3 Performance Test — When sharpened and set in accordance with **7.4** each saw shall cut cleanly and freely, without binding, when tested on well seasoned Indian oak or other suitable hardwood, both when cutting with the grain and when cutting across the grain.

APPENDIX A

(*Clauses* 7.4.1 *and* 7.4.2)

METHODS OF SHARPENING OF THE TEETH

A-1. METHODS

A-1.0 The following methods of sharpening of the teeth are commonly employed.

A-1.1 Cross Sharpening of the Teeth — In this method a saw-sharpening file is held at an angle to the blade and every alternate tooth is filed from one side of the saw. The blade is then turned around and the remaining teeth filed at the same angle (*see* Fig. 3).

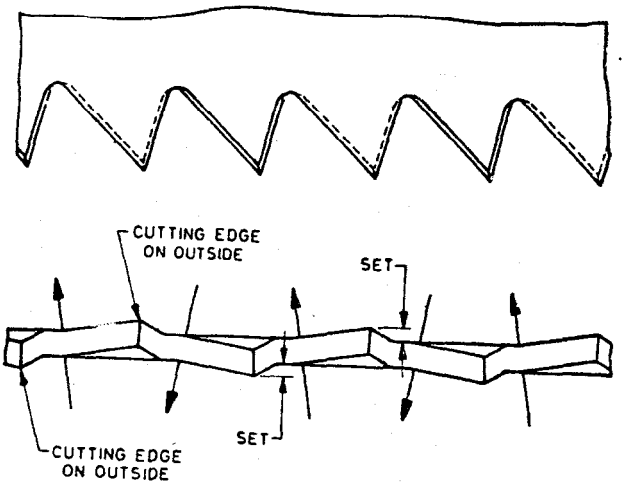


FIG. 3 METHOD OF CROSS SHARPENING

NOTE — Filing at an angle puts a bevel on the sides of the teeth, producing a sharp point on one side of each tooth. By filing as indicated by arrows these points are on the outside. If the wrong teeth are filed the sharp points will be in the centre bevelled off to the outside.

A-1.2 Half Cross Sharpening of the Teeth — This method is similar to cross sharpening except that all sharpening is done from the same side of the blade, the teeth being filed at an angle alternately from left to right.

A-1.3 Straight Sharpening of the Teeth — In this method all sharpening is done from the same side of the blade with the file at 90° to the line of the blade.

APPENDIX B

(*Clause* 10.1)

SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY

B-1. SCALE OF SAMPLING

B-1.1 Lot — In any consignment all the saws of the same grade and nominal size manufactured under similar conditions of manufacture shall be grouped together to constitute a lot.

B-1.2 For ascertaining the conformity of the lot to the requirements of this specification tests shall be carried out from the saws selected from each lot separately. The number of saws to be selected at random from a lot shall be in accordance with col 1 and 2 of Table 3. To ensure the randomness of selection, the procedure as laid down in IS : 4905-1968* shall be followed.

TABLE 3 SAMPLING SIZE AND PERMISSIBLE NUMBER OF DEFECTIVES

Lot Size	Sample Size	Permissible No. of Defectives	Sub-sample Size
(1)	(2)	(3)	(4)
Up to 50	5	0	2
51 „ 150	8	0	3
151 „ 300	13	1	5
301 „ 500	20	2	8
501 and above	32	3	13

B-2. NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

B-2.1 The saw selected according to **B-1.2** shall be examined for hardness (*see* **5.1**), dimensions (*see* **6.1**), general requirements (*see* **7**). Any saw failing to meet the requirements for any one or more of the characteristics mentioned above shall be declared defective.

B-2.1.1 The lot shall be considered conforming to the requirements of the characteristics mentioned above if the number of saws found defective is less than or equal to the corresponding number given in col 3 of Table 3.

B-2.2 From the lot found satisfactory according to **B-2.1.1**, a sub-sample as indicated in col 4 of Table 3 shall be drawn and subjected to tests (*see* **11**).

B-2.2.1 The lot shall be declared conforming to the requirements of this specification if all the saws tested according to **B-2.2** satisfy the corresponding requirements.

*Methods for random sampling.