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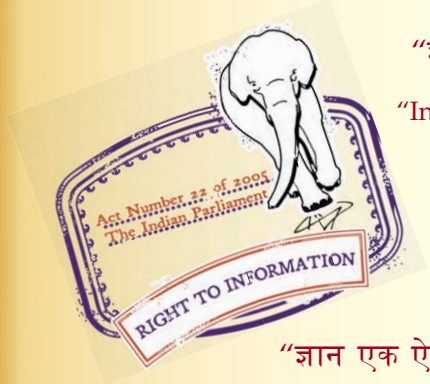

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IS : 1630 - 1984
(Reaffirmed 2001)

Indian Standard

SPECIFICATION FOR MASON'S TOOLS FOR PLASTER WORK AND POINTING WORK

(First Revision)

UDC 69·002·54 : 693·61

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

Gr 5

October 1984

Indian Standard

SPECIFICATION FOR MASON'S TOOLS FOR PLASTER WORK AND POINTING WORK

(First Revision)

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Indian Standard

SPECIFICATION FOR MASON'S TOOLS FOR PLASTER WORK AND POINTING WORK

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 31 July 1984, after the draft finalized by the Flooring and Plastering Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 A variety of tools such as trowels, rules, floats, etc, has been developed and used in our country for plaster and pointing work. These tools differ from region to region and in order to promote their mass production and improve their quality, it is necessary to rationalize their dimensions and specify the materials that should go in their manufacture. This standard has been prepared with this object in view. It gives not only the materials and dimensions but also indicates the types of use for which the tools are best suited. This standard was first published in 1960. In this revision, besides updating its provisions, the details of materials for tools have been included.

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 measurement, 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.

---

1. SCOPE

1.1 This standard lays down the material, essential dimensions and requirements of mason's tools for plaster work and pointing work, commonly used in building construction.

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

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions of terms given in IS : 10403-1983* shall apply.

3. MATERIALS

3.1 Tool Steel — It shall conform to following composition:

	Percent
Carbon	0·45 to 0·65
Silicon, *Max*	0·35
Manganese, *Max*	0·60
Sulphur, *Max*	0·05
Phophorus, *Max*	0·05

3.2 Mild steel shall conform to the following:

a) Sheet conforming to grade 0 of IS : 1079-1973†, and

b) Rod conforming to IS : 7887-1975‡.

3.3 Timber used for handle shall conform to IS : 620-1975§.

3.4 Timber used for wooden lath, float, rules shall conform to IS : 1331-1971‖.

3.5 The brass used for plumb bob shall conform to IS : 3488-1980¶.

4. TOOLS USED FOR THE PREPARATION OF THE BACK-GROUND (EITHER FOR THE FIRST OR THE SUBSEQUENT COATS)

4.1 Raking Needle — This shall be a tool steel rod bent and tapered at one end as shown in Fig. 1. A wooden handle may be provided. This tool is useful for raking out mortar from masonry joints.

4.2 Hacking Tool — This shall be in the form of a hammer with chisel or point-edged as shown in Fig. 2 and 3. The head shall be of mild steel, and the chisel or point edge shall be of tool steel attached to the head as shown in Fig. 2 and 3. The handle shall be of timber and shall have circular or preferably oval cross section as shown in the figure.

*Glossary of terms relating to building finishes.

†Specification for hot rolled carbon steel sheet and strip (*third revision*).

‡Specification for mild steel wire rod for general engineering purposes.

§Specification for cut sizes of timber (*second revision*).

‖Specification for brass bars, rods and sections suitable for forging (*first revision*).

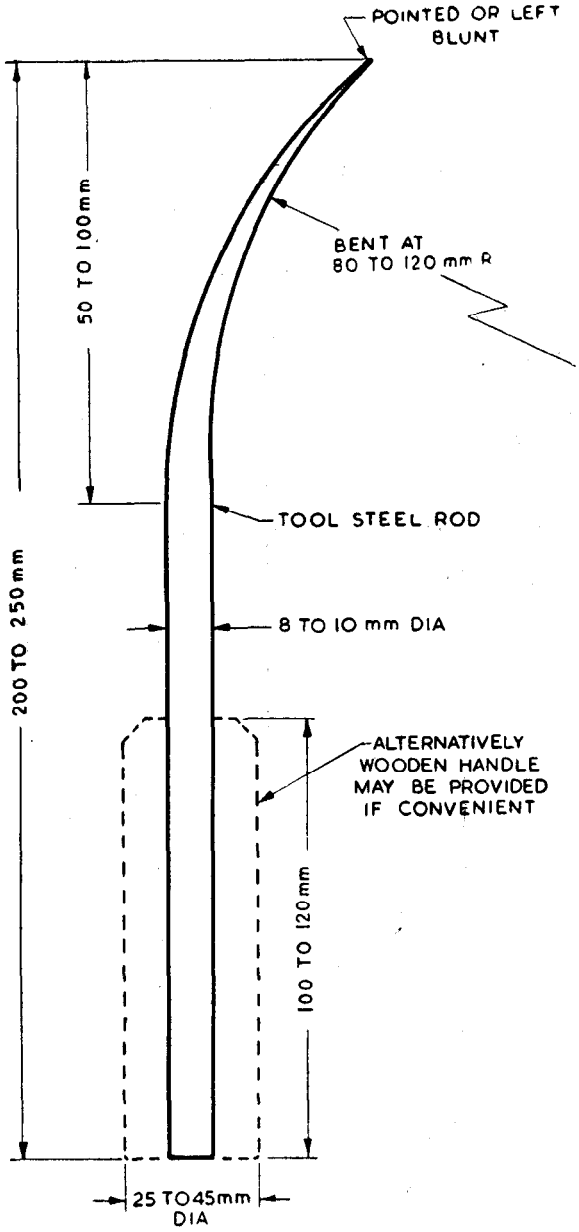
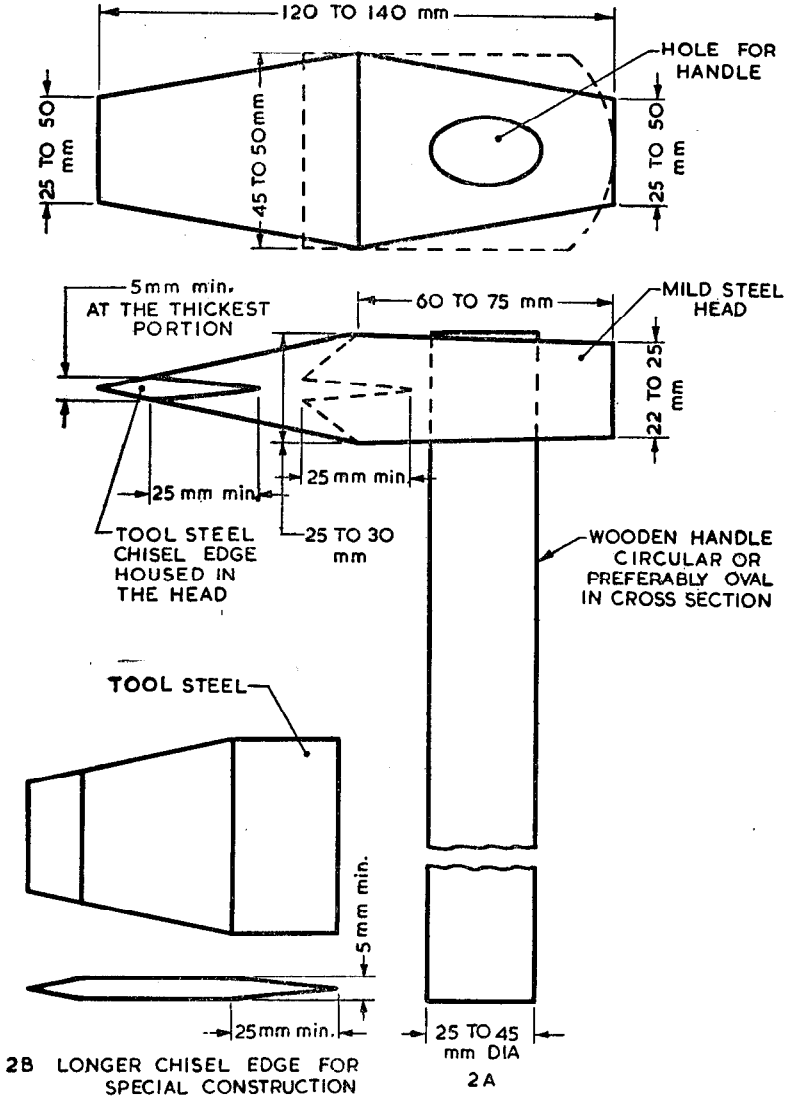


FIG. 1 RAKING NEEDLE



The dotted lines show an alternative arrangement where a longer chisel edge as in 2B is provided and metal in the head is correspondingly saved

FIG. 2 HACKING TOOL WITH CHISEL EDGE

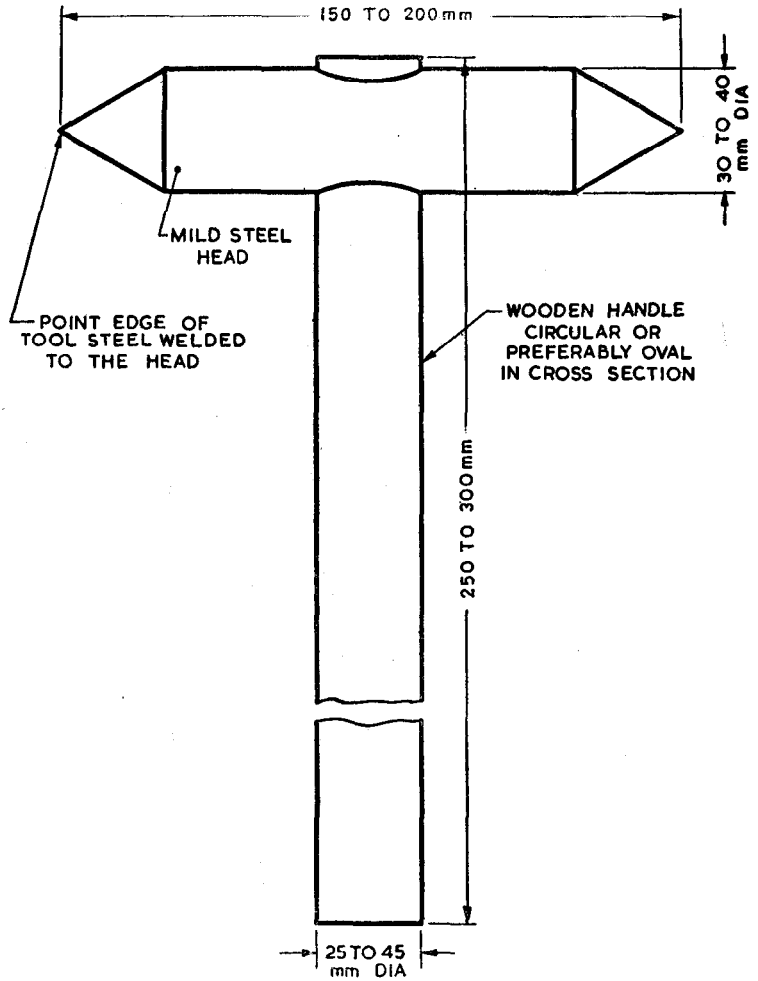


FIG. 3 HACKING TOOL WITH POINT EDGE

4.3 Brushes — The brushes may be of the following two kinds depending on use:

a) Brushes used for dusting, scrubbing and cleaning the surfaces. These shall be of stiff construction and conform to IS : 3015-1964*.

*Specification for brush scrubbing.

b) Brushes (namely, for spray, stock brush, etc) used for sprinkling water and damping the surface shall conform to IS : 7477-1974*.

4.4 Scratcher — This tool is used for scratching the surface of partially set plaster in the undercoat to provide a key for the following coat and may be of the following types:

a) A fan-shaped group of three to five pointed wooden laths as in Fig. 4.

b) A comb with a wooden handle as shown in Fig. 5 and fitted with nails of suitable size (about 3 mm dia) at spacings of 15 to 25 mm and protruding 10 to 20 mm.

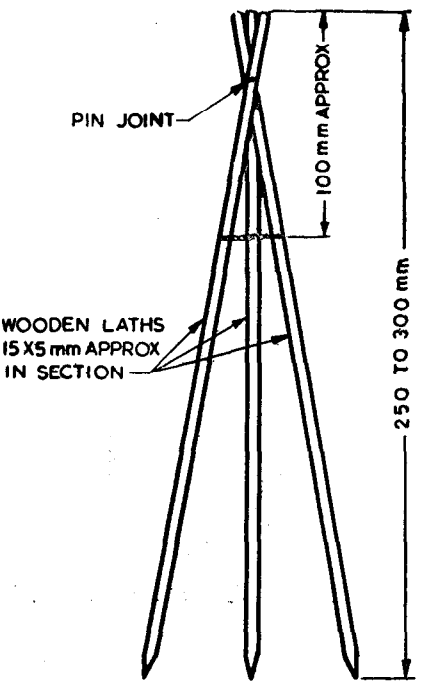
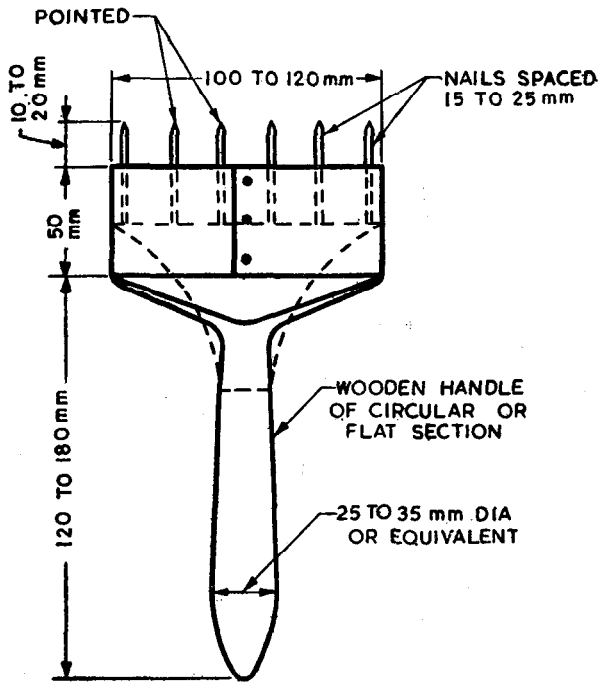


FIG. 4 FAN TYPE SCRATCHER

*Specification for brushes, hardness hard.



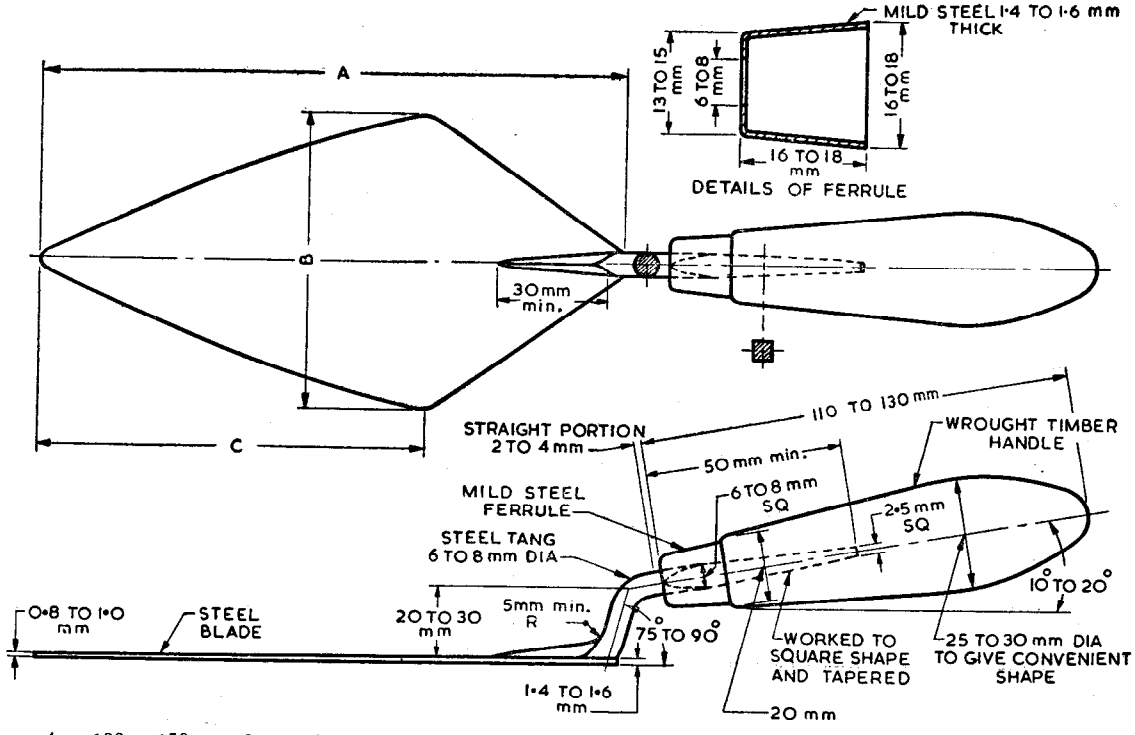
The dotted lines show an alternate shape for a short comb scratcher made from wooden board, 15 to 35 mm thick

FIG. 5 COMB TYPE SCRATCHER

5. TOOLS USED FOR MIXING AND APPLICATION OF MORTAR

5.1 Trowel — This shall have a tool steel blade, connected by means of a mild steel or tool steel tang to a wooden handle. The end of the wooden handle which houses the tang shall be protected by means of a mild steel ferrule. The dimensions and construction of trowels shall be as given in Fig. 6. Large trowels (*see* Fig. 6) are used for gauging quantities of plaster, and for dashing or laying the plaster on to the surface. Small trowels are used for finer finish, for work at margins, angles, etc.

5.2 Mortar Pan — Mortar pan is used for handling and conveyance of cement, sand, mortar, etc, and also for mixing operations. It shall be a hollow pan generally of the shape shown in Fig. 7A or 7B and shall be of a mild steel and of a seamless construction. The panel shall have folded edge all round to resist tearing. The size, shape, thickness of sheet and other constructional details for mortar pans shall be as specified in Table 1.



A = 100 to 150 mm for small trowels and 15 to 30 cm for large trowels.

B = 0·4 A to 0·6 A, and in case of stop trowel, tuck trowel and cross joint trowel preferably equal to 0·25 A to 0·4 A.

C = 0·65 A to 0·8 A, the larger ratio applying to trowels used in finishing work.

FIG. 6 MASON'S TROWEL

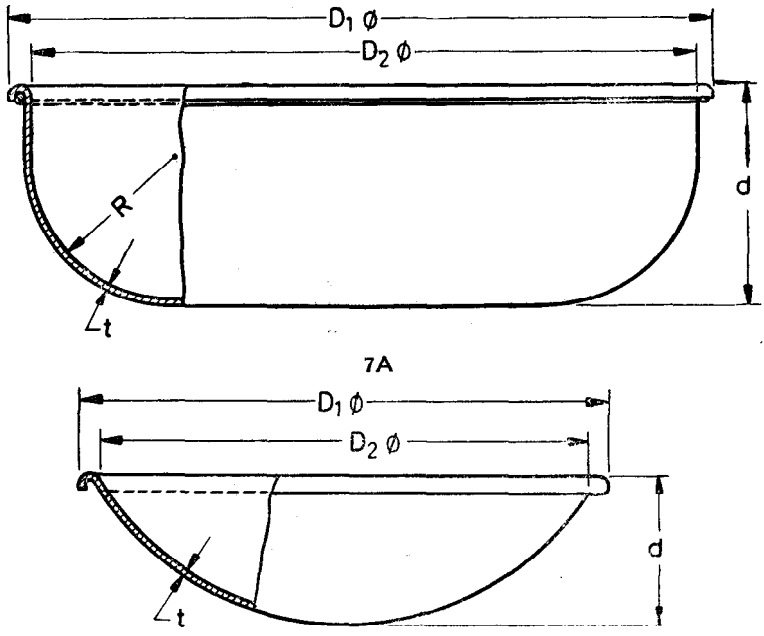


FIG. 7 MORTAR PAN

6. TOOLS USED FOR PLUMBING, LEVELLING AND SETTING OUT 'SCREEDS'

6.1 The plumb bob set shall consist of a metallic (brass or mild steel) cone of 30 to 50 mm overall diameter, a piece of cord or wire attached centrally to the conical weight, and a metallic or wooden block in the shape of a cube, and of side dimension equal to the diameter of the plumb bob. The block shall have a central hole through which the cord is threaded. The details of attachment and suspension shall be as shown in Fig. 8. The plumb bob set is used for checking the plumbness or verticality of a face of a wall or other structural member.

6.2 Mason's Square — This shall be in a single piece as shown in Fig. 9 and shall be made of mild steel. All faces shall be plane and all edges straight. The two arms shall be rectangular and shall be at right angles to each other, and the external angle as well as the internal angle shall be $90° \pm \frac{1}{2}°$. It is preferable that at least one of the arms is graduated to measure or read lengths. The mason's square is used for laying right angles and allied measurements.

TABLE 1 SIZES OF MORTAR PANS

(*Clause* 5.2)

All dimensions in millimetres.

Sl No.	Size	Outside Dia (D_1)	Inside Dia (D_2)	Depth (d)	Thickness of Sheets (t)	Shape	Construction	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	525	525	510	165	1·25	115 mm radius (R) on sides and flat bottom	Beaded edge with 6 mm wire inside	Ref Fig. 7A
ii)	465	465	450	150	1·25	do	do	Ref Fig. 7A
iii)	400	400	385	125	0·80	Entire pan to be an arc of a circle	do	Ref Fig. 7B
iv)	365	365	350	100	0·80	do	Beaded edge without wire inside	Ref Fig. 7B
v)	315	315	300	90	0·80	do	do	Ref Fig. 7B
vi)	265	265	250	90	0·80	do	do	Ref Fig. 7B

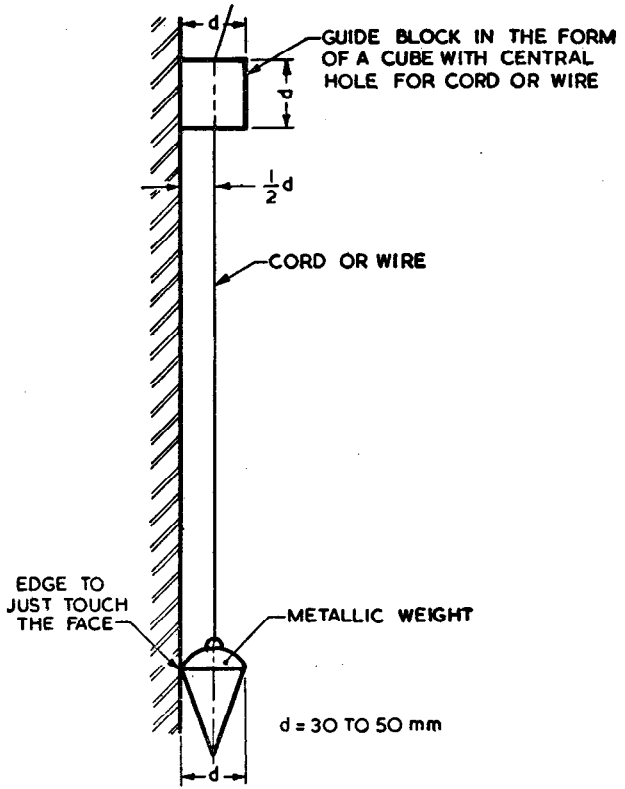


FIG. 8 PLUMB BOB SET AND ITS SUSPENSION

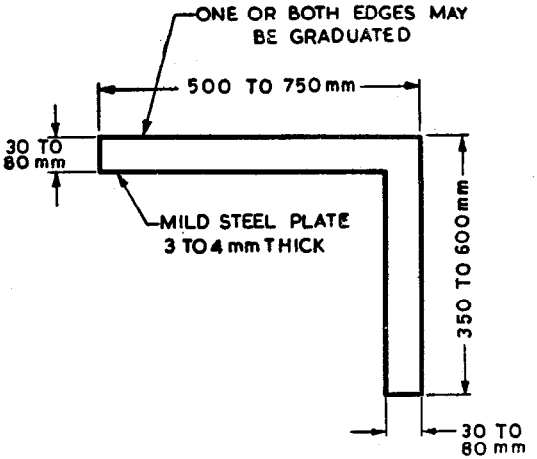


FIG. 9 MASON'S SQUARE

6.3 Spirit Levels — There shall conform to IS : 5706-1970*.

7. POINTING TOOLS

7.1 Naylas — These are tools in the form of hooks made of rods used for pointing stone masonry. They shall be of three types, namely, small, medium and large and the details and dimensions shall be as shown in Fig. 10. The small nayla shall be used for vertical joints only. For horizontal joints, the long nayla shall first be used to align the joints straight and then the medium ones.

8. TOOLS FOR SCOURING, FLOATING OF FINISHING OF THE PLASTER

8.1 Small Wooden Float — This shall consist of a flat rectangular or leaf-shaped wooden board with a wooden handle securely fastened to it at the top as shown in Fig. 11. The bottom surface of the board shall be finished perfectly plane and smooth. The grain of the wood shall run along the length of float. The small wooden float is used for 'scouring' or rough finishing operations.

8.2 Large Wooden Floats or Rules (Battens, Pattis, etc) — These shall be rectangular boards of timber, accurately planed smooth on all faces and with clear straight edges, and may be of the following types:

a) *Straight Edge* — This shall be a rectangular piece of timber accurately planed smooth on all faces and of dimensions as shown in Fig. 12. It may or may not be provided with a handle depending upon the facility required for operation. It is used for working a plaster coat to a plane smooth finish or for levelling operations in conjunction with a spirit level.

b) *Bevelled Edge (Bevelled Batten)* — This shall be a straight piece of timber similar to the straight edge, but it shall have one of the edges bevelled or its cross section shall be suitably wedge-shaped so that it may be used for working at corners and edges or as guides when running cornices and mouldings. No handle need be provided. It may have a variety of shapes, two of which are shown with dimensions in Fig. 13.

9. WORKMANSHIP AND FINISH

9.1 Tools made of metal shall be free from seams, flaws, scales, pits, cracks and other defects. The casting of the bob shall be free from sand holes, blow holes, scabs and other imperfections. The working surface of the trowel blade shall be finished flat and smooth. The edges of the hacking tools shall be ground properly ready for use and finished bright.

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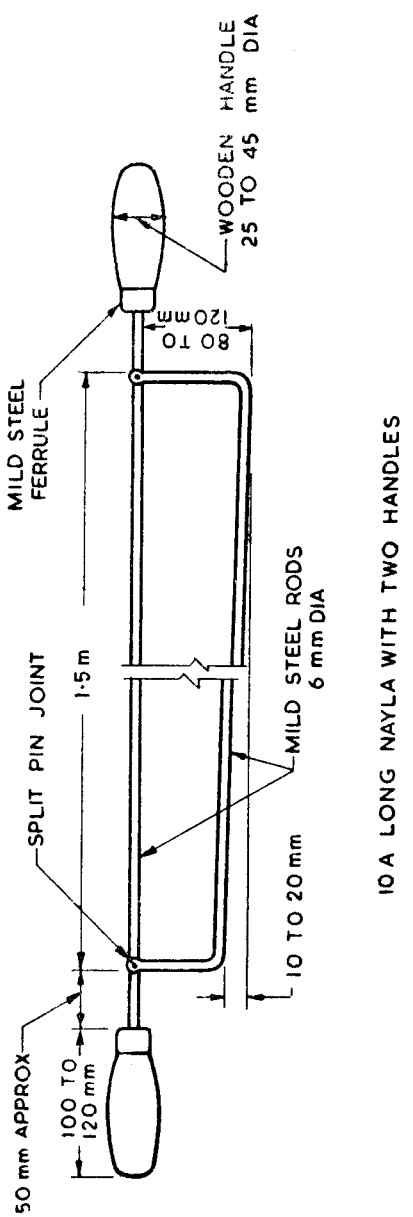
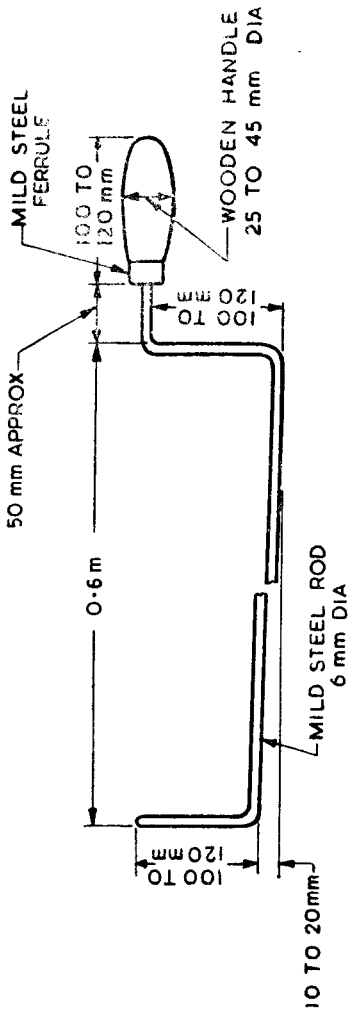
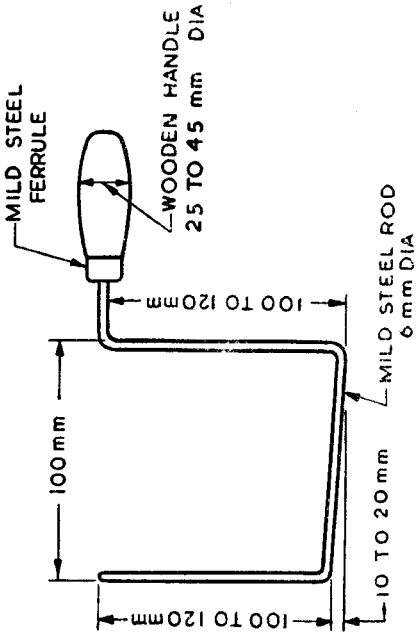
ecification or spirit level for use in precision engineering.



10A LONG NAYLA WITH TWO HANDLES



10B MEDIUM NAYLA WITH ONE HANDLE



10C SMALL NAYLA WITH ONE HANDLE

FIG. 10 DIFFERENT TYPES OF NAYLA

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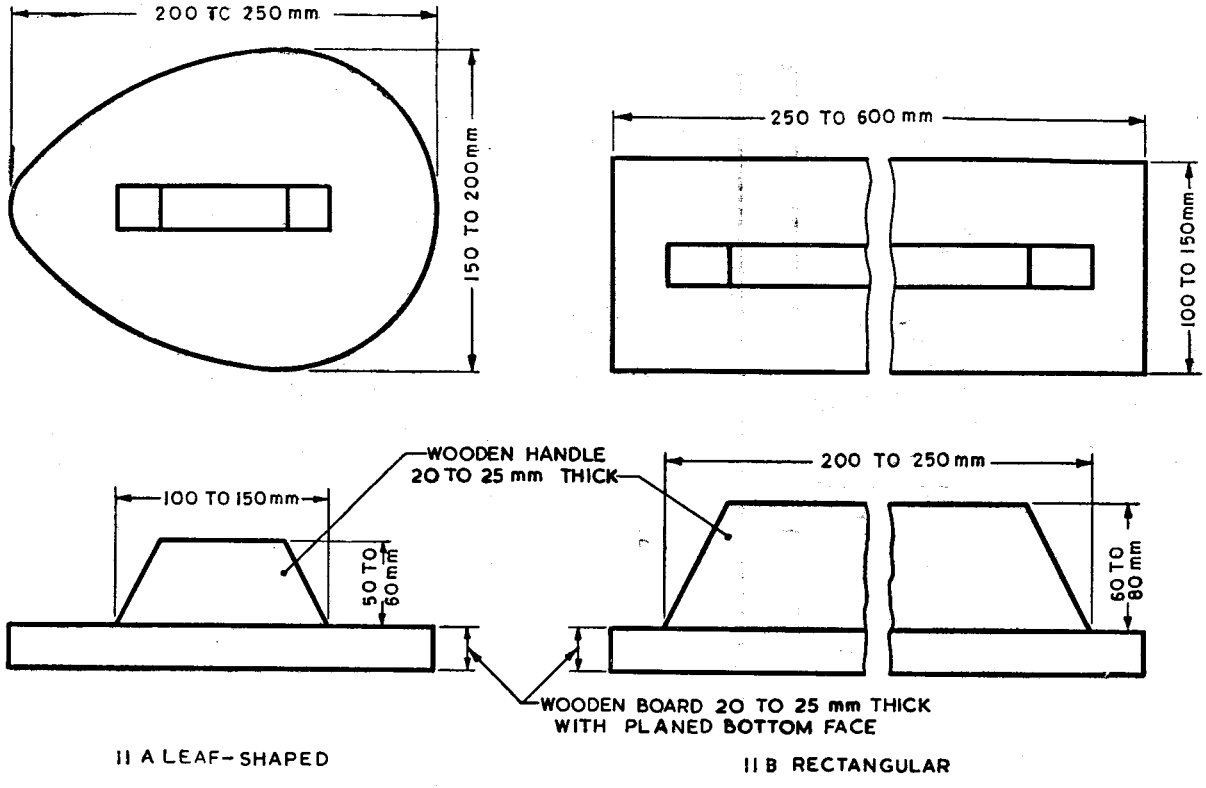

FIG. 11 SMALL WOODEN FLOATS

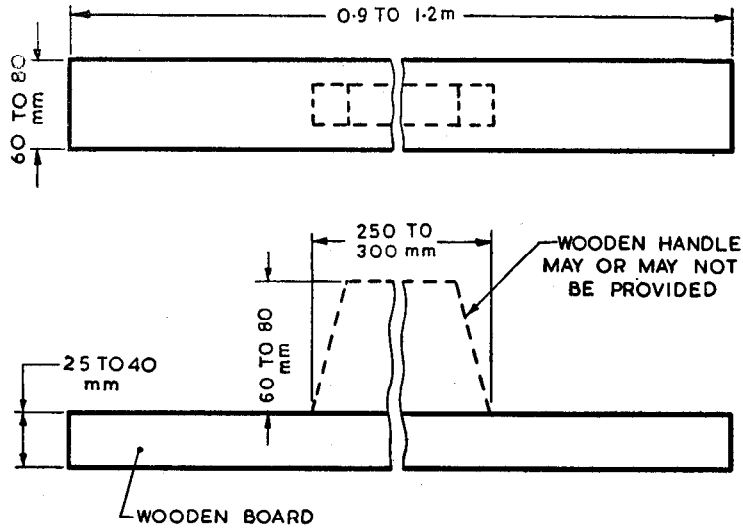

FIG. 12 STRAIGHT EDGE

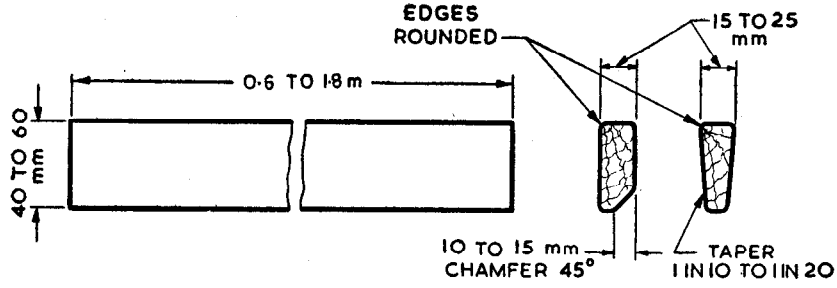

FIG. 13 BEVELLED EDGE

9.2 The ferrules shall be finished smooth and bright and shall be free from sharp edges. The welding or brazing shall be even, continuous and sound. The ferrules shall fit tightly on to the handle.

9.3 The wooden handle shall be finished smooth all over and shall be finished either with French polish or with shellac varnish.

9.4 The metal tools shall be varnished or coated with an approved anti-corrosive paint or preservative to protect them from rust. The trowels shall be wrapped in kraft paper.

10. MARKING

10.1 The tools shall be legibly and indelibly marked with the manufacturer's initials or recognized trade-mark.

10.1.1 Each tool 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.

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Base Units

Quantity	*Unit*	*Symbol*
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	*Unit*	*Symbol*
Plane angle	radian	rad
Solid angle	steradian	st

Derived Units

Quantity	*Unit*	*Symbol*	*Definition*
Force	newton	N	1 N = 1 kg.m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2

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