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भारतीय मानक मसौदा

डेंटल वैक्स चाकू — विशिष्टि

[IS 3877 का पहला पुनरीक्षण]

Draft Indian Standard

Dental Wax Knife — Specification

[First Revision of IS 3877]

[ICS 11.060.20]

Dentistry Sectional Committee, MHD 08	Last date for comments: **06 September 2024**

FOREWORD

(Formal clause will be added later)

This standard was originally published in 1967 as 'Specification for Wax Knife, Dental'. This standard was one of a series of Indian Standard specifications for prosthetic dental instruments and has been formulated at the instance of the Advisory Committee for Development of Surgical Instruments, Medical Equipment and Appliances of the Government of India. This revision aligns the cross references to the latest standards, incorporates revised designations for steel and i revised certification clause.

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 same as that of the specified value in this standard.

1 SCOPE

This standard specifies the requirements for wax knives.

2 REFERENCES

The standards given below 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 these standards.

IS No.	*Title*
IS 1068 : 1993	Electroplated coatings of nickel plus chromium and copper plus nickel plus chromium — Specification (*Third Revision*)
IS 1570 (Part 5) : 1985	Schedules for wrought steels Part 5 stainless and heat-resisting steels (*Second Revision*)
IS 1570 (Part 6) : 1996	Schedules for wrought steels Part 6 carbon and alloy tool steels (*First Revision*)

3 MATERIALS

3.1 Blade

The blade of the knife shall be made from stainless steel or carbon steel. The stainless steel shall conform to designation X30Cr13 of IS 1570(Part 5) and the carbon steel to designation T80V2 of Schedule VI of IS 1570 (Part 6).

3.2 Handle Scales

The handle scales shall be made of wood or ebonite. The wood used shall be well seasoned, straight grained and free from knots and cracks.

3.2.1 The wood shall be chosen from any of the following species and the moisture content shall not exceed 12 percent:

Botanical Name	*Standard Trade Name*
Dalbergia latifolia Roxb.	rosewood (blackwood)
Dalbergia sissoo Roxb.	sissoo
Tectona grandis Linn. f.	teak

3.3 Rivets

The rivets shall either be made from mild steel or a suitable aluminium alloy.

4 SHAPE AND DIMENSIONS

The wax knife shall conform to shape and dimensions as shown in Fig. 1.

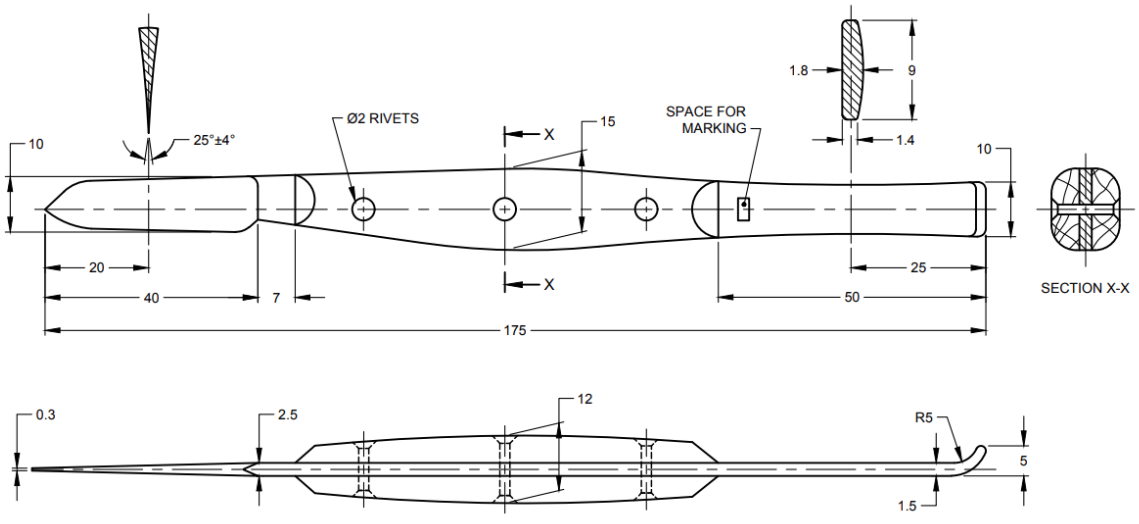
5 WORKMANSHIP AND FINISH

5.1 The cutting edge of the wax knife shall be properly sharpened to an angle of 25° ± 4°. All edges except the cutting edge shall be smooth and rounded. The cutting edge shall be free from burrs, feathers, nicks and waviness. The riveting shall be firm, secure and sound.

5.2 When the blade is made of stainless steel, it shall be suitably passivated and finished bright all over. In case the blade is made of carbon steel, it shall be plated chromium over nickel, except the cutting edge. The thickness of the plating shall be as follows:

Finish	*Minimum Thickness*
Nickel	15 μm
Chromium	0.15 μm

5.2.1 The plating shall be even and uniform throughout and shall be bright. The plated surfaces shall be free from visible plating defects, such as unplated spots, cracks, stains or blisters. The plating shall be non-porous, firm and shall peel off. In other respects, the plating shall conform to IS 1068.



All dimensions in millimetres.
Fig. 1 Wax Knife, Dental

6 HEAT TREATMENT

6.1 The blade shall be uniformly hardened and tempered to 400 to 450 HV.

7 TEST FOR CORROSION RESISTANCE

7.1 The knife with stainless steel blade shall be tested for corrosion resistance as given in **7.1.1.**

7.1.1 *Copper Sulphate Test*

The knife shall be scrubbed with soap and warm water, rinsed in hot water followed by a dip in ethyl alcohol (95 percent) and dried. The knife then shall be immersed in copper sulphate solution at room temperature for 6 minutes and then washed with fresh water or wiped with wet cotton wool. The copper sulphate solution shall be made up as follows:

Copper sulphate ($CuSO_4.5H_2O$)	4.0 g
Sulphuric acid (H_2SO_4) (sp gr 1.84)	10.0 g
Water (H_2O)	90.0 ml

There shall be no red stains or spots on the knife blade after the test, but the polished surface becoming dull may be permitted.

8 MARKING

8.1 The instrument shall be legibly and indelibly marked with the manufacturer's name, initials or trade-mark and the country of manufacture. In case of stainless steel, the word 'SS' shall also be marked on the blade.

8.2 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 product(s) may be marked with the Standard Mark.

9 PACKING

9.1 The carbon steel blade shall be coated with a thin film of a solution containing corrosion inhibitors and wrapped in wax paper, while the stainless steel blade knife shall be wrapped either in a polyethylene bag or wax paper. Each knife, then, shall be packed in cartons in accordance with best trade practice. The cartons shall bear the name of the instrument, manufacturer's name, initials or trade-mark and country of manufacture.