भारतीय मानक ब्यूरो

BUREAU OF INDIAN STANDARDS

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भारतीय मानक मसौदा

वस्त्रादि – डोफर और फ्लैट स्ट्रिपिंग कोंब ब्लेड्स – विशिष्टि

(*आई एस 837 का दूसरा पुनरीक्षण*)

Draft Indian Standard

TEXTILES — DOFFER AND FLAT STRIPPING COMB BLADES — SPECIFICATION

(*Second Revision of IS 837*)

ICS 59.120.10

Textile Machinery and Accessories Sectional Committee, TXD 14	Last date for receipt of comments is 30 November 2025

FOREWORD

(*Formal clauses will be added later*)

Doffer and flat stripping comb blades are essential components in the carding machine, used to maintain efficient fiber processing and cleaning. The doffer comb blade continuously strips the web of fibers from the doffer cylinder, ensuring uniform delivery and preventing fiber entanglement.

Similarly, the flat stripping comb blade removes accumulated fibers, dust, and short fibers from the flats, maintaining the card's cleanliness and performance. Proper design, alignment, and maintenance of these blades are crucial for achieving consistent sliver quality and improving overall carding efficiency.

This standard was originally published in 1962 and subsequently revised in 1982. The present standard has been made to incorporate the following major changes:

a) Requirement of material composition has been updated;
b) Requirement of elongation has been incorporated;

c) Requirement of tensile strength has been incorporated; and
d) Amendment has been incorporated.

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.

1 SCOPE

This standard prescribes the requirements for doffer comb and flat stripping comb blades of stationery flat card.

2 REFERENCES

The standards listed 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 the standards listed below.

IS No.	*Title*
IS 1570 (Part 1) : 1978	Schedules for wrought steels: Part 1 Steels specified by tensile and/or yield properties (*first revision*)
IS 3073 : 1967	Assessment of surface roughness
IS 4905 : 2015/ ISO 24153 : 2009	Random sampling and randomization procedures (*first revision*)

3 MANUFACTURE

3.1 Material

The comb blade shall be made from high carbon alloy steel or stainless steel conforming to designation as per IS 1570 (Part 1). The chemical composition of steel is given in Table 1 and Table 2 for ready reference.

3.2 Workmanship and Finish

The comb blade shall have a smooth finish all over and shall be free from burrs and other manufacturing defects. The surface finish shall ensure that the fibres do not stick and shall have roughness grade of N5 (*see* IS 3073).

3.3 Shape

The shape of comb blade may be straight or curved.

Table 1 Chemical Composition High Carbon Alloy Steel
(*Clause* 3.1)

Sl No.	Constituents	Percent	
		Min	***Max***
(1)	(2)	(3)	(4)
i)	Carbon	0.60	1.0
ii)	Silicon	0.30	0.35
iii)	Manganese	0.50	1.0
iv)	Sulphur	—	0.04
v)	Phosphorus	—	0.04

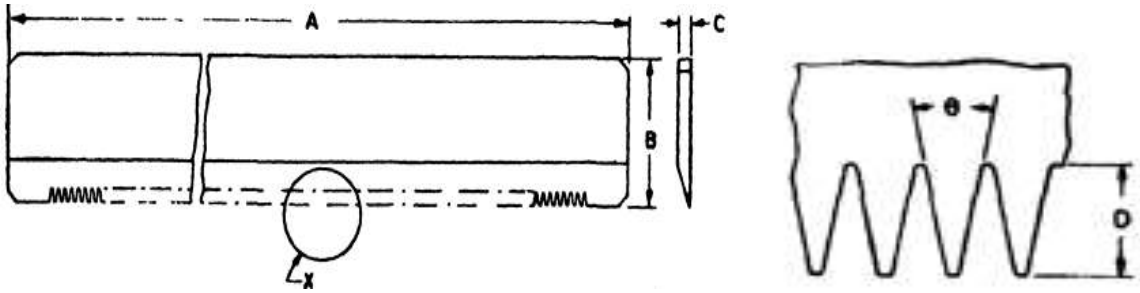
Table 2 Chemical Composition of Stainless Steel
(*Clause* 3.1)

Sl No.	Constituents	Percent	
		Min	***Max***
(1)	(2)	(3)	(4)
i)	Chromium	10	20
ii)	Nickel	—	15
iii)	Manganese	—	2
iv)	Carbon	0.10	0.50
v)	Sulfur	—	0.01
vi)	Phosphorus	—	0.05

4 REQUIREMENTS

4.1 Dimensions

The dimensions of the comb blade as shown in Fig. 1 shall be as agreed to between the buyer and the seller subject to the tolerances given below:



Enlarged View at X

FIG. 1 DIMENSIONS OF THE COMB BLADE

Dimension	*Tolerance*
Angle of teeth, θ	+ 1°
Length, A	± 1 mm
Width, B	± 0.5 mm
Thickness, C	± 0.06 mm
Depth of teeth, D	± 0.1 mm

4.2 Number and Profile of Teeth

The number and profile of teeth of the comb blade shall be as agreed to between the buyer and the seller.

4.3 Rectilinearity of Tips of Teeth

The tips of all the teeth in the comb blade shall be in the same plane.

4.3.1 By means of a suitable device, keep the comb blade vertical on a rigid plane surface with the tip of its teeth facing downwards. With a suitable measuring gauge, find the maximum clearance in millimetres, correct to 0.01 mm between the tip of the teeth and the plane surface. If the value for maximum clearance, so obtained, is less than 0.05 mm, the comb blade shall be held to be in conformity with the requirements of **4.3**.

4.5 Elongation

Elongation percentage should typically around 20 percent to 25 percent. This increased elongation can enhance the blade ability to flex and withstand operational stress reducing the likelihood of breakage during use.

4.6 Tensile strength

Tensile strength should typically exceed 600N/mm² for durability.

4.4 Straightness of Blade

The comb blade shall be straight.

4.4.1 Place the comb blade so that it rests freely on a rigid plane surface. With a suitable measuring gauge, find the maximum clearance in millimetres, correct to 0.01 mm between the blade and the plane surface. If the value for maximum clearance, so obtained, is less than 0 05 mm the comb blade shall be held to be in conformity with the requirements of **4.4**.

5 PRESERVATIVE TREATMENT

Before packing each comb blade shall be coated with grease or any suitable rust preventive material.

6 SAMPLING

6.1 Lot

In any consignment, all the doffer and flat stripping comb blades delivered to a buyer against a despatch note shall constitute a lot.

6.2 Unless otherwise agreed to between the buyer and the seller, the number of comb blades to be selected at random for inspection shall be according to col (2) and col (3) of Table 3. To ensure the randomness of selection, methods given in IS 4905 shall be followed.

Table 3 Sample Size and Permissible Number of Defectives
(*Clause* 6.2)

Sl No.	Lot Size	Sample Size
(1)	(2)	(3)
i)	Up to 15	3
ii)	16 to 25	5
iii)	26 to 50	8
iv)	51 and above	13

6.3 All the comb blades selected according to **6.2** shall be examined for dimensions, recti-linearity of tips of teeth and straightness of blade. The lot shall be considered conforming to the requirements of this standard if all the comb blades selected meet the relevant requirements.

7 MARKING

7.1 Each comb blade shall be clearly marked with the following:

a) Name of the article;

b) Manufacturer's name, initials or trade-mark, if any; and
c) Any other information required by the law in force and/or by the buyer.

7.2 BIS Certification Marking

The product 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 may be marked with the Standard Mark.

9 PACKING

The teeth portion of each comb throughout its length blade shall be positioned inside a slot made for this purpose in a well-seasoned dry strip of timber. The strip of timber shall then be securely tied to the comb blade. The blades thus prepared shall then be packed in a wooden case according to the provisions of the agreement between the buyer and the seller.