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भारतीय मानक मसौदा

वस्त्रादि – टॉप रोलर्स के लिए कॉट्स – विशिष्ट

(आई एस 7175 का पहला पुनरीक्षण)

Draft Indian Standard

TEXTILES — COTS FOR TOP ROLLERS — SPECIFICATION

(First Revision of IS 7175)

ICS 59.120.10

Textile Machinery and Accessories
Sectional Committee, TXD 14

Last date for receipt of comment is
30 March 2024

FOREWORD

(Formal clauses will be added later)

Top roller cots are needed to avoid the fibres getting crushed or damaged, and also to give a proper grip on the fibres when they are being drafted.

This standard was originally published in 1974. The present revision has been made to incorporate the following changes:

- a) Dimensions of bare roller, finished outside diameter and width of covering has been modified;
- b) Shore A Hardness of cots has been modified;
- c) Reference clause has been incorporated;
- d) All amendments have been incorporated;
- e) Marking clause has been modified; and
- f) Method of Buffing of Cots (Annex A) has been modified.

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 : 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

1.1 This standard prescribes requirements of rubber cots for top rollers used in textile spinning machinery.

1.1.1 This standard does not specify the chemical characteristics of rubber.

2 REFERENCES

The standard 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 standard listed below.

<i>IS No.</i>	<i>Title</i>
IS 2500 (Part 1) : 2000 / ISO 2859- 1:1999	Sampling Procedure for Inspection by Attributes Part 1 Sampling Schemes Indexed by Acceptance Quality Limit (AQL) for Lot — By — Lot Inspection (<i>third revision</i>)

3 DIMENSIONS

The recommended values for bare roller diameter, finished outside diameter and width of covering shall be as given below:

a) Bare Roller Diameter in mm — (16), (18), 19, (20), (22), 24, (25), 26, 28, (32), (34), 35, (36), (38), 40, 45, 50, 55, 60, and in steps of 10 over diameter 60.

b) Finished Outside Diameter in mm — 25, 27, 28, 29, 30, 31, 32, 33, 35, 35.5, 36.5, 40, 41.5, 45 and in steps of 5 over diameter 45.

c) Width of Covering in mm — 20, 22, 25, 28, 30, 32, (34), 35, 38, 39.5, 40, 45, 50, 55, 60, and in steps of 10 over width 60.

NOTE — The dimensions appearing in parentheses shall not be used for new designs.

4 MANUFACTURE

4.1 Material

Cots shall be made of synthetic rubber or a blend of cork and synthetic rubber. The material should not be adversely affected by oils. The cots of different compositions and/or shore hardness shall be distinguishable.

4.2 Workmanship and Finish

The outer surface of the bare cots shall be seamless. The cots when buffed (*see* Annex A) to the required outside finished diameter shall be free from surface irregularities, cuts, blisters, porosity, foreign matter or any other defect which is likely to affect the life or usefulness of cots.

5 REQUIREMENTS

5.1 Dimensions

The width excluding mounting allowance and bore diameter of the cots shall be as prescribed by the buyer subject to the following tolerances:

Width excluding mounting allowance	$\pm 0.5 \text{ mm}$
Bore Diameter	$\begin{cases} + 0.0 \\ - 0.8 \end{cases} \text{ mm}$

NOTES

1 Mounting allowance on width shall be decided by the manufacturer depending upon the material used and may be intimated to the buyer.

2 On the basis of bare roller diameter specified by the buyer the manufacturer shall decide the bore diameter depending upon the material used which may be intimated to the buyer. The material shall be such that cot after being mounted does not split or slip.

5.1.1 The wall thickness shall be such that when the cot is mounted and buffed it should be capable of meeting the finished outside diameter fixed by the customer and shall meet the requirements of quality as specified in **5.2**.

NOTE — Wall thickness of cot is a very important characteristic. The thicker the wall the greater the number of possible rebuffing and thus longer the service life of the cot. Normally finished wall thickness is 3.2 mm, *Min*, for speed and ring frames.

5.2 Shore A Hardness

The Shore A hardness of cots shall be as agreed between the buyer and the seller in the range of 50° to 95° subject to a tolerance of $\pm 5^\circ$ Shore A.

5.2.1 The variation in Shore A hardness at any two points of any cot shall not be more than 5° Shore A.

6 DESIGNATION

6.1 The cots shall be designated as follows:

Bare roller diameter \times Finished outside diameter \times Width of covering — Shore A hardness — Execution A or B — Saddle pressure in daN (*see* Notes).

NOTES

1 Execution A represents cots without bevelled sides and Execution B represents cots with bevelled sides and the person ordering cots is free to order execution A or B.

2 daN (decanewton) is the unit of force. 1daN = 1.02 kgf.

Example:

The cots for bare roller diameter of 19 mm, finished outside diameter of 28 mm, width of covering 25 mm, hardness 82° shore A, execution B and saddle pressure 18 daN shall be designated as under:

19 \times 28 \times 25 — A/82 — Execution B — 18

7 SAMPLING

7.1 In order to ascertain the conformity of the lot to the requirements of this specification, method given in IS 2500 (Part 1) shall be used or sampling inspection. The sampling plan as given in **7.1.1** shall be adopted.

7.1.1 For dimensions, workmanship, finish and shore hardness, single sampling plan with inspection level III and acceptable quality level (AQL) 2.5 percent shall be adopted [see Tables 1 and 2 of IS 2500 (Part 1)].

8 MARKING

8.1 Each bag shall be marked or tagged with-the following:

- a) Name of the manufacturer, initials or trade-mark, if any;
- b) Designation; and
- c) Compound reference.

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 products may be marked with the Standard Mark.

9 PACKING

Depending on the order to be executed, a suitable number of cots of homogeneous lot shall be packed in polyethylene bags.

ANNEX A
(*Clause 4.2*)

RECOMMENDED METHOD OF BUFFING OF COTS

A-1 Any suitable machine capable of grinding on centres or with centreless grinding attachment may be used for buffing fresh cots or for rebuffing. For large scale buffing, it is advisable to employ two buffing machines. One machine may be used to buff the cots to about 0.2 mm to 0.3 mm higher than the finished outside diameter specified. This is known as rough buffing and for this a machine with coarse stone of about 40 grit may be used. The other machine with a finer stone of 60 grit or 80 grit may be used for final or finished buffing. By using two machines in turn it is possible to obtain a very much higher rate of production of finished cots. However, for rebuffing of cots in the mills only one buffing machine may be used with stone of 60 grit or 80 grit. The range of the corresponding roughness Ra value on the cot surface after grinding is 0.75 μm to 0.95 μm or $(0.8 + 0.2) \mu\text{m}$.