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IS 415 (2002): Shuttlecocks [PCD 22: Sports Goods]



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भारतीय मानक
शटल कौक — विशिष्टि
(तीसरा पुनरीक्षण)

Indian Standard
SHUTTLECOCKS — SPECIFICATION
(*Third Revision*)

ICS 665.626

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

August 2002

Price Group 2

FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Sports Goods Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

This standard was first published in 1953. It was subsequently revised in 1963 and 1978. In this revision, requirements have been altered to align the standard with, the latest international rules of the game. Provision has been made to allow use of synthetic materials besides natural feathers in this revision.

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 2:1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

SHUTTLECOCKS — SPECIFICATION

(Third Revision)

1 SCOPE

This standard prescribes requirements for shuttlecocks used in playing badminton.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

IS No.	Title
2500	Sampling inspection procedures:
(Part 1) : 2000	Attribute sampling plans indexed by acceptable quality level (AQL) for lot by lot inspection (<i>third revision</i>)
4905 : 1968	Methods for random sampling

3 MATERIALS

Any suitable material whether natural feathers or synthetic material may be used for the manufacture of shuttle provided the product meets the requirements given in 4.

4 REQUIREMENTS

4.1 Dimensions

As shown in Fig. 1.

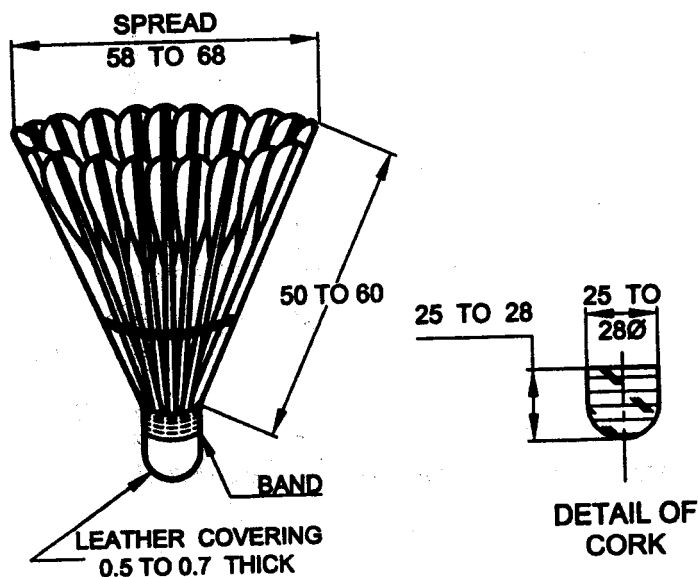
4.2 Mass

The shuttle shall weigh from 4.74 to 5.50 g.

4.3 Construction

4.3.1 The cork body shall be cylindrical in shape with a hemispherical base at the striking end as shown in Fig. 1. It shall have 16 holes suitably bored into its flat face to a minimum depth of 12 mm for fixing the feathers. Before boring, the top of the cork shall be faced with textile fabric or other suitable material.

4.3.2 The shuttlecocks shall have 16 feathers glued into the holes of the cork with synthetic adhesive. Individual feathers in a given shuttlecock shall be of the same exposed length as given below:



All dimensions in millimetres.

FIG. 1 SHUTTLECOCK

- a) Overall length of the feather shall be 62-70 mm;
- b) Length outside the cork shall be 50-60 mm; and
- c) Feather inside the cork, 11 mm, *Min.*

4.3.3 The feathers in shuttlecock shall be fastened firmly with thread or other suitable material and have at least one binding preferably at the centre of the feathers.

4.3.4 The base covering shall be glued to the surface of the cork. The band shall be glued gelatin to cover the edges of the base covering at the top of the cork. Bare portion of the cork under the band shall not be more than 2 mm.

4.3.5 The spread of the feathers of the shuttlecock shall be circular. The tips of feathers shall lie on a circle with a diameter from 58 to 68 mm.

4.3.6 The base shall be 25 to 28 mm in diameter and rounded on the bottom.

4.4 Pace and Flight

A shuttle shall be deemed to be of correct pace when it is hit by a player with a full underhand stroke from a spot immediately above one back boundary line in a direction parallel to the side lines and at an upward angle, to fall not less than 530 mm and not more than 990 mm short of the other back boundary line (*see* Fig. 2).

5 PACKING AND MARKING

5.1 Packing

The shuttlecocks shall be packed in suitable cylindrical cardboard/PVC/plastic boxes in 5/10 numbers and indicate number of shuttlecock in the box.

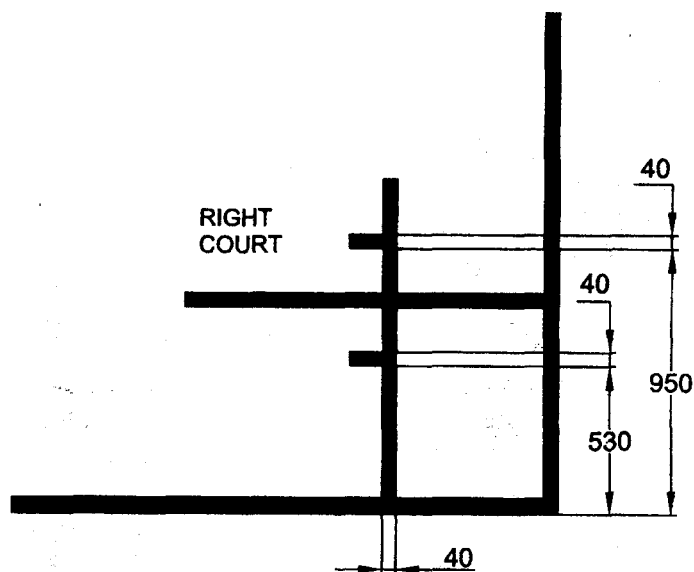
5.2 Marking

5.2.1 The shuttlecocks/container shall be marked with the following:

- Name of the material,
- Indication of the source of manufacture,
- Net mass of the material,
- Grade,
- Batch or lot number, and
- Month and year of its manufacture.

5.2.2 The material may also be marked with the Standard Mark.

The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.



All dimensions in millimetres.

FIG. 2 TESTING MARKS FOR DOUBLE COURT

6 SAMPLING

6.1 Unless otherwise agreed to between the purchaser and the supplier, the sampling procedure given in IS 2500 (Part 1) shall be followed.

6.2 Lot

In any consignment, all the cylindrical boxes containing shuttlecocks of the same type, grade and range of mass, manufactured from the identical materials under similar conditions shall be grouped together to constitute a lot.

6.3 The inspection level and AQL to be followed for various requirements are given in **6.3.1** to **6.3.3**.

6.3.1 For visual and dimensional requirements, a single sampling plan with inspection level III and AQL 2.5 percent given in Tables 1 and 2 of IS 2500 (Part 1) shall be followed.

6.3.2 For the requirement of pace and flight, at least 10 percent of the cylindrical boxes with a minimum of 2 shall be selected and approximately equal number of shuttlecocks shall be taken from each selected box. The boxes from the lot and shuttlecocks shall be selected at random. In order to ensure the randomness of selection, the procedures given in IS 4905 may be followed. The lot shall be considered conforming to the requirements of this specification, if all the shuttlecocks in the sub-sample meet this requirement.

6.3.3 For the requirement of mass given in **4.2**, a single sampling plan with inspection level III and AQL 1 percent given in Tables 1 and 2 of IS 2500 (Part 1) shall be followed.

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This Indian Standard has been developed from Doc : No. PCD 22 (1436).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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