

BUREAU OF INDIAN STANDARDS
DRAFT FOR COMMENTS ONLY

Not to be reproduced without permission of BIS or use as Standard.

Doc. No. : PGD 28 (19830)
IS 10994 (Part 4) : 2023

भारतीय मानक मसौदा
शॉट गन के कार्ट्रिज के लिए विशिष्टि
भाग 4 भरी हुई कैप
(IS 10994 भाग 4 का पहला पुनरीक्षण)

Draft Indian Standard
SPECIFICATION FOR CARTRIDGES FOR SHOT GUNS
PART 4 CAP FILLED
(*First revision of IS 10994 Part 4*)

UDC 623.455.6 : 623.442.6

Arms and Ammunition for Civilian Use
Sectional Committee PGD 28

Last Date for Comments: XXXX

NATIONAL FOREWORD

This Indian Standard (First Revision) will be adopted by the Bureau of Indian Standards after the draft finalized by the Arms and Ammunition for Civilian Use Sectional Committee will be approved by the Production and general Engineering Division Council.

This Indian Standard originally published by the Indian Standards Institution on 1985, The first revision of this standard has been taken up to include the last methods for Arms and Ammunition for Civilian Use being practiced across the globe.

This standard covers the dimensional, material and testing requirements for Cartridges for Shot Guns. Cap filled initiates of the cartridge.

This Indian Standard (IS 10994) is being issued in the following parts, part 1 covering general requirements for shot gun cartridges and subsequent parts covering the components.

- Part 1 General requirements
- Part 2 Blank cartridges
- Part 3 Case empty
- Part 4 Cap filled
- Part 5 Anvil
- Part 6 Propellant
- Part 7 Discs
- Part 8 Air cushion
- Part 9 Lead shots

In this revision, the following changes have been made:

- a) New figures have been added;

- b) Practices of fitting removal and cleaning have been updated; and
- c) Structure of the document has been updated.

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.

Indian Standard

**SPECIFICATION FOR CARTRIDGES FOR SHOT GUNS
PART 4 CAP FILLED**

1 SCOPE

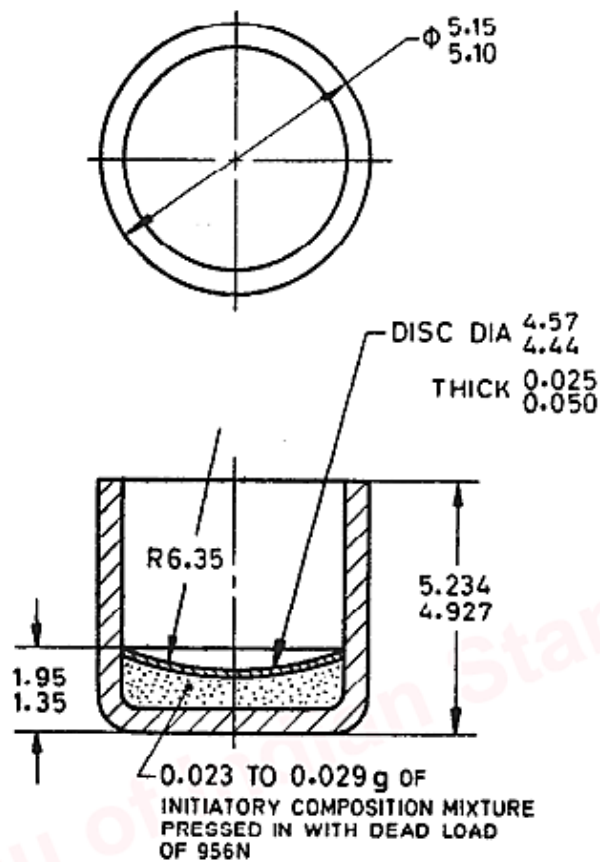
Covers the dimensional and material requirements of cap filled for shot gun cartridges.

2 REFERENCES

<i>IS No.</i>	<i>Title</i>
IS 3167 : 1983	Cap copper alloy strip (<i>first revision</i>)
IS 347 : 1975	Varnish shellac for general purposes (<i>first revision</i>)
IS 10994 (Part 1) : 1984	Specification for cartridges for shot guns: Part 1 General requirements?

3 DIMENSIONS

Shall be as shown in Fig. 1.



All dimensions in millimetres.

FIG. 1 DIMENSIONS FOR CAP FILLED

4 MATERIAL

4.1 Cap Empty

The cap empty shall be made from copper alloy conforming to IS 3167.

4.2 Initiatory Composition

The initiatory composition shall be from one of the compositions given in Annex A.

4.3 Disc

The disc shall be made from lead tin foil or from paper white fine conforming to requirements given in Annex B. The disc shall be pressed-in with initiatory composition or separately with a minimum pressure of 890 N dead load and varnished with shellac conforming to IS 347.

5 OTHER REQUIREMENTS

The requirements not covered in this standard shall be as given in IS 10994 (Part 1).

6 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. Details available with the Indian Standards Institution.

ANNEX A
(Clause 4.2)
REQUIREMENTS OF INITIATORY COMPOSITION

A-1 INGREDIENTS

The respective compositions shall contain the ingredients in the proportions and within the tolerances indicated below:

Composition	Mercury Fulminate		Potassium Chlorate		Antimony Sulphide	
	Nominal Proportion percent	Tolerance percent	Nominal Proportion percent	Tolerance percent	Nominal Proportion percent	Tolerance percent
A1 Mixture	37.5	±2.0	37.5	±2.0	25.0	±1.3
B1 Mixture	11.0	±0.6	52.5	±2.6	36.5	±2.0
C1 Mixture	32.0	±1.8	45.0	±2.2	23.0	±1.3
D1 Mixture	25.0	±1.3	40.0	±2.0	35.0	±2.0

A-2 TESTS

Samples taken from any portion of any mixture of the composition shall comply with the following requirements:

Requirements	Permissible Value	Test Method
Moisture	0.05 percent, <i>Max</i>	Expose 5 grams of the material in a shallow dish in a darkened glass desiccator over dry Silica gel for a period of not less than 12 hours. Take the percentage loss in weight as the moisture content
Matter insoluble in acid A1 and C1 Mixture B1 and D1 Mixture	0.08 percent, <i>Max</i> 0.11 percent, <i>Max</i>	—
Matter insoluble in gritty A1 and C1 Mixture B1 and D1 Mixture	0.06 percent, <i>Max</i> 0.09 percent, <i>Max</i>	—

ANNEX B
(Clause 4.3)

REQUIREMENTS FOR CARTRIDGE PAPER WHITE FINE

B-1 PHYSICAL REQUIREMENTS

The material shall be conditioned prior to test for 24 hours in an atmosphere of 65 ± 2 percent relative humidity at $27 \pm 2^\circ\text{C}$ and shall comply with the following physical requirements:

Sl. No.	Substance g/m^2	Thickness mm	Bursting Strength kPa
1.	42-46	0.051 ± 0.005	110.8
2.	84-92	0.089 ± 0.009	179.4

B-2 CHEMICAL REQUIREMENTS

Sl. No.	Characteristics	Requirement	Test Method
1.	Moisture content at 103 to 105°C for 2 hours	9 percent, <i>Max</i>	IS 1060 (Part 1) : 2022 Methods of sampling and tests for paper and allied products : Part 1(revised)’.
2.	pH of water extract a) Maximum b) Minimum	7.5 5.5	IS 1060 (Part 1) : 2022
3.	Water soluble chlorides calculated as sodium chloride percent by mass	0.05	IS 1060 (Part 2) : 1960 ‘methods of sampling and tests for paper and allied products : Part 2’
4.	Water soluble chlorides calculated as anhydrous sodium sulphate percent by mass maximum	0.25	IS 1060 (Part 2) : 1960
5.	Fatty acid calculated as oleic acid percent by mass maximum	0.25	IS 1060 (Part 2) : 1960
6.	Ash on incineration at $800 \pm 25^\circ\text{C}$	7.5 percent, <i>Max</i>	IS 1060 (Part 1) : 2022
7.	Lead (when lead free material is required) calculated as metallic lead percent maximum	0.03	IS 1060 (Part 2) : 1960

NOTE — All percentages shall be calculated on the dry mass of the material after drying to constant mass