



**GOVERNMENT OF INDIA
MINISTRY OF DEFENCE**

JOINT SERVICES SPECIFICATION

ON

PAPER, WHITE FINE AMMUNITION

(DS Cat No.)

(Paper, White Fine Ammunition 0.051 mm thick	- 9310-000 007)
(Paper, White Fine Ammunition 0.089 mm thick	- 9310-000 013)

**JSS 9310 – 06: 2002
(Reaffirmed 2011)**

**DIRECTORATE OF STANDARDISATION
DEPARTMENT OF DEFENCE PRODUCTION
MINISTRY OF DEFENCE
'H' BLOCK, NIRMAN BHAWAN PO
NEW DELHI - 110 011**

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**LIST OF MEMBERS ASSOCIATED WITH ARMAMENT STANDARDISATION
SUB COMMITTEE**

1. This Joint Services Specification has been approved by Dr. SN Asthana, Director, Directorate of Armaments (R&D), and Chairman Armament Standardisation Sub Committee by circulation.
2. The following members were present/consulted in approving the document: -

<u>Sl No.</u>	<u>Name & Designation</u>	<u>Organisation</u>
1.	Shri AC Jain, Addl. Director	Dte of Armaments, DRDO Orgn, New Delhi
2.	Col SK Mohan	ADGWE/GS (WE-2/3), New Delhi
3.	Col RN Nambiar	Dte of Arty (GS/Artillery-5), New Delhi
4.	Shri B.P. Singh, DON	Dte Gen of Naval Armt, Naval HQ, New Delhi
5	Air Cmde R Kumar, PDA	Dte of Armt & Safety Eqpt, Air HQ, New Delhi
6.	Col Sunil Bhatia	DGEME, Army HQ, New Delhi
7.	Capt VP Varghese	DGNAI, Naval HQ, New Delhi
8.	Shri Yogesh Kumar, SSO – II	DGAQA, DD (Armt) Gp, New Delhi
9.	Shri KL. Tripathi P.Sc.O Deputy Controller	CQA (ME), Pune
10	Col JS Lotay, Jt Controller	CQA (Amn), Pune
11.	Lt Col Y.C Panday	CQA (SA), Ichapur, West Bengal
12.	Col A.N. Mathur	CQA (W), Jabalpur
13.	Shri SC Aglawe, Sc ‘F’	HEMRL, DRDO, Pune
14.	Shri GC Adhikari, Sc ‘F’	ARDE/DRDO Orgn, Pune
15.	Shri Shrish Kumar Jt. General Manager	Ammunition Factory, Pune
16.	Shri S K Saxena, NSO	Secretary ASSC

RECORD OF AMENDMENTS

Amendment		Amendment pertains to : Sl. No./Para No./ Column No.	Authority	Amended by	Signature & Date
No.	Date			Name & Appointment (IN BLOCK LETTERS)	

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0. FOREWORD

0.1 This Joint Services Specification has been prepared by the Armament Standardisation Sub Committee on the authority of the Standardisation Committee, Ministry of Defence.

0.2 This specification has been approved by the Ministry of Defence and is mandatory for use by the Defence Services.

0.3 This specification is reaffirmation of JSS 9310 - 06 : 2002 and read as JSS 9310 – 06 : 2002 (Reaffirmed 2011).

0.4 This specification would be used for manufacture, quality assurance and supply of Paper, white fine ammunition.

0.5 Quality Assurance Authority for the item covered by this specification is The Controller, Controllorate of Quality Assurance (Military Explosives), Aundh Road, Kirkee, Pune – 411 020. Enquiries regarding this specification relating to any contractual conditions should be addressed to the Quality Assurance Authority named in the tender or contract. Other enquiries should be referred to: -

The Director,
Directorate of Standardisation,
Ministry of Defence,
'H' Block, Nirman Bhawan PO,
New Delhi - 110 011

0.6 Copies of this specification can be obtained on payment from: -

The Director,
Directorate of Standardisation
Standardisation Documents Centre,
Ministry of Defence
Room No. 5, 'J' Block
Nirman Bhawan, PO New Delhi - 110 011.

0.7 This specification holds good only for the supply order for which it is issued.

1. SCOPE

1.1 This specification is meant to govern manufacture, supply and quality assurance of Paper, white fine ammunition suitable for use in ammunition components.

1.2 Paper, white fine ammunition to JSS 9310-06 for substance 84g to 92g per square metre is acceptable in lieu of paper, label, ammunition (colours required) to specification IND/ME/474(a).

2. RELATED SPECIFICATIONS/DOCUMENT

2.1 Reference is made in this specification to: -

IS 138:1992	Ready Mixed Paint, Marking, for Packages and Petrol Containers - Specification (Third Revision) Reaffirmed 2004, Amds 1
IS 1060(Part 1):1966	Methods of sampling and test for paper and allied products: Part 1 (Revised) Reaffirmed 2009, Amds 4
IS 1060 (Part 2): 1960	Methods of sampling and test for paper and allied products: Part 2 Reaffirmed 2009
JSG 0114:1994	Methods of tests for textiles used in ammunition

2.2 Copies of the Indian Standards are obtainable on payment from: -

Bureau of Indian Standards,
Manak Bhawan,
9, Bahadur Shah Zafar Marg,
New Delhi- 110 002
or
their regional/branch offices

2.3 Copies of JSG are obtainable on payment from: -

The Director,
Directorate of Standardisation
Standardisation Documents Centre,
Ministry of Defence
Room No. 5, 'J' Block
Nirman Bhawan, PO New Delhi - 110 011.

3. MATERIALS/MANUFACTURE

3.1 The paper shall be made from pure bleached sulphite wood pulp. It shall be uniformly made. It shall be free from knots, lumps, cracks, pinholes or other defects. It shall be machine sized and one side glazed.

3.2 The paper shall be supplied in sheets or rolls of such size as may be prescribed by the terms of the contract.

4. TENDER SAMPLE

4.1 The manufacturer/contractor shall submit a tender sample of 500 g conforming to this specification, free of all charges. The sample shall be kept flat, preferably rolled without folds, wrinkles and protected from exposure.

5. PRE-INSPECTION OF STORES/CONSIGNMENT

5.1 Manufacturers/contractors must satisfy themselves that the stores are in accordance with the terms of contract and fully conform to the required specification, by carrying out a thorough pre-inspection of each lot before actually tendering the same for inspection to the Quality Assurance Officer nominated under the terms of the contract. A declaration by the contractor that a necessary pre-inspection has been carried out on the stores tendered will be submitted along with the challan. The declaration will also indicate the method followed in carrying out pre-inspection showing the features checked/tested and will have the test certificate attached to the challan/declaration.

5.2 If the Quality Assurance Officer finds that the pre- inspection of the consignment as required above has not been carried out, the consignment is liable for rejection.

6. QUALITY ASSURANCE

6.1 Inspection

6.1.1 The material shall be subject to inspection by and to the final approval of the Quality Assurance Officer/Quality Assurance Authority.

6.1.2 Samples of the material and of the packages may be taken from any portion of the batch/lot/consignment.

6.2 Sampling

6.2.1 Not less than five percent of the packages shall be sampled. Four representative sheets 250 g shall be taken from each package.

6.2.2 The samples from rolls shall not include the end metres and shall be cut with edges parallel to the machine and cross directions of the paper respectively.

6.3 Criteria for Conformity

6.3.1 If on examination, any sample is found not to conform to this specification, the whole batch/lot/consignment shall be rejected.

6.3.2 The foregoing provisions shall apply equally to prime contractors and sub-contractor, if any.

6.4 Test requirements

6.4.1 Samples from any portion of batch/lot/consignment shall conform to clause 3 above and in addition shall conform to the test requirements shown in the following tables: -

TEST REQUIREMENTS OF PAPER, WHITE FINE AMMUNITION

A. CHEMICAL

Srl. No.	Characteristics	Passing Standard	Test Method
(i)	Moisture content at 103° C to 105°C for 2 hours, per cent by mass	Max 9.0	IS 1060 (Part 1) Clause 9
(ii)	pH of aqueous extract	Min 5.5 Max 7.5	IS 1060 (Part 1) Clause 10
(iii)	Water soluble Chlorides Calculated as Sodium chloride, per cent by mass	Max 0.05	JSG 0114 Method No.5
(iv)	Water soluble Sulphates Calculated as anhydrous Sodium sulphate, per cent by mass	Max 0.25	IS 1060 (Part 2) Clause 18

(v)	Fatty acids, calculated as Oleic acid, per cent by mass	Max 0.25	IS 1060 (Part 2) Clause 19
(vi)	The ash on incineration at 800°C ± 25 degC, per cent by mass	Max 7.5	IS 1060 (Part 1) Clause 11
(vii)	Lead (when Lead free material is required), calculated as metallic Lead, per cent	Max 0.03	IS 1060 (Part 2) Clause 16

Note: All per cent shall be calculated on the dry mass of the material after drying to a constant mass.

B. PHYSICAL

Srl. No.	Characteristics	Passing Standard	Test Method
(i)	Substance, g/m ² (i) 0.051 mm thick (ii) 0.089 mm thick	42 - 46 84 - 92	IS 1060 (Part 1) Clause 6
(ii)	Thickness, mm (i) 0.051 mm thick (ii) 0.089 mm thick	0.051 ± 0.005 0.089 ± 0.009	IS 1060 (Part 1) Clause 7
(iii)	Bursting strength, kPa (average of at least 20 tests) (i) 0.051 mm thick (ii) 0.089 mm thick	110.8 179.4	IS 1060 (Part 1) Clause 12.6

Note : (i) The material shall be conditioned prior to test, for 24 hours in an atmosphere of 65±2 per cent relative humidity at 27°C±2 deg C.

7. WARRANTY

7.1 The stores supplied against the contract shall be deemed to be warranted against the defective material and performance by the contractor for a period of 6 months from the date of receipt of the stores at the consignee's end and shall retain the properties described above. If during this period any of the stores supplied is found defective, the same shall be replaced by the manufacturer/supplier/contractor free of charges at the consignee's premises.

8. PACKAGING

8.1 The paper is to be delivered flat and unfolded in reams of 500 sheets. Each ream is to be wrapped in paper and 10 such reams are wrapped in hessian cloth to form a bale. The bale will be placed between two suitable thick boards (wood or paper) one on top and one at bottom, and the assembly bonded all round by hoop iron, for safe rail transit.

8.2 When the supply is required in rolls, each roll is to be wrapped with packing paper followed by hessian and hoop ironed by bamboo strips.

OR

Packaging (preservation and packing) should be in accordance with the terms of the contract.

9. MARKING

9.1 All packages containing the material shall be indelibly and legibly marked with the following details: -

- (i) Nomenclature and specification number of the material
- (ii) Name and address of the consignee.
- (iii) A/T. or S.O. number and date
- (iv) Consignment number.
- (v) Batch No. and date of manufacture
- (vi) Gross and net mass
- (vii) Consecutive number of package and total number of packages in consignment
- (viii) Date of supply
- (ix) Manufacturer's initials or recognised trademark.

9.2 In addition to the above the Quality Assurance Officer may suggest some more markings/identifications suitable at the time of inspection.

9.3 The paint used for marking should conform to IS 138 and to the satisfaction of the Quality Assurance Officer/Quality Assurance Authority.

10. DEFENCE STORES CATALOGUE NUMBER

10.1 The Defence Stores Catalogue Number allotted to Paper, white fine ammunition are as under: -

<u>Nomenclature</u>	<u>D.S. Cat. No.</u>
Paper, white fine ammunition 0.051 mm thick	9310-000 007
Paper, white fine ammunition 0.089 mm thick	9310-000 013

11. SAFETY OF OPERATIONS

11.1 Nothing in this specification shall relieve the manufacturer/supplier/contractor of his responsibility for the safety of operations in the manufacture, storage, transit or use of this store.

12. SUGGESTIONS FOR IMPROVEMENT

12.1 Any suggestion for improvement in this specification shall be forwarded to: -

The Director,
Directorate of Standardisation,
Ministry of Defence,
'H' Block, Nirman Bhawan PO,
New Delhi - 110 011.