



रक्षा मंत्रालय
MINISTRY OF DEFENCE

संयुक्त सेवा विनिर्देश
JOINT SERVICES SPECIFICATION

ON

PAPER PRESSPAHN AMMUNITION
GRADE 1 AND GRADE 2

(DS Cat. Nos.)

	Grade - 1	Grade - 2
For 0.25 mm Thick	5970 - 000 001	5970 - 002 856
For 0.50 mm Thick	5970 - 002 757	5970 - 002 857
For 2.00 mm Thick	5970 - 036 409	-

मानकीकरण निदेशालय
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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)	

Sl. No.	CONTENTS	PAGE No.
0.	FOREWORD	1 - 2
1.	SCOPE	3
2.	RELATED SPECIFICATIONS / DOCUMENTS	3
3.	MANUFACTURE AND FINISH	3
4.	TENDER SAMPLE	3
5.	PRE - INSPECTION OF STORES / CONSIGNMENT	4
6.	QUALITY ASSURANCE	4 - 6
7.	WARRANTY	6
8.	PACKAGING	6
9.	MARKING	6
10.	STORAGE AND INSTALLATION LIFE	6
11.	SAFETY OF OPERATIONS	6
12.	DEFENCE STORES CATALOGUE NUMBER	7
13.	SUGGESTIONS FOR IMPROVEMENT	7

0. FOREWORD

0.1 This Joint Services Specification has been prepared by 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 (a) This specification was prepared in the year 1996.

(b) This specification is a revision of JSS 5970 - 11 : 2009, (Revision No. 1) and supersedes the same.

0.4 This specification would be used for Manufacture, Supply and Quality Assurance of Paper Presspahn Ammunition Grade 1 and Grade 2.

0.5 Quality Assurance Authority for the item covered by this specification is The Controller, Controllerate of Quality Assurance (Military Explosives), Aundh Road, Pune - 411 020. Enquiries regarding technical parameters shall be addressed to the Quality Assurance Authority, while other enquiries shall be referred to :

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

0.6 Non registered users can obtain the following on payment :

(a) Copies of IS from :

Bureau of Indian standards,
Manak Bhawan,
9, Bahadur Shah Zafar Marg,
New Delhi - 110 002.

or

Their regional / Branch offices.

(b) Copies of JSSs / JSGs from :

The Director,
Directorate of Standardisation
Standardisation Documents Centre,
Ministry of Defence
Room No. 05, 'J' - Block,
Nirman Bhawan PO,
New Delhi - 110 011.

JSS 5970 - 11 : 2015
(Revision No. 2)

0.7 Indian Standard (IS) specifications are available free of cost for registered users on :

Directorate of Standardisation Website

www.ddpdos.gov.in

For registration visit our website.

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

0.9 DIRECTORATE OF STANDARDISATION WEBSITE : All the approved JSSs / JSGs are available on the Directorate of Standardisation Website **www.ddpdos.gov.in**. Defence Organisations desirous of accessing a copy of this document are requested to approach the Directorate of Standardisation for obtaining user id / password to access the website.

1. SCOPE

1.1 This specification is meant to govern Manufacture, Supply and Quality Assurance of :

(a) Paper, Presspahn, Ammunition Grade 1 suitable for use in ammunition components.

(b) Paper, Presspahn, Ammunition, Grade 2 suitable for use in ammunition components where special electrical grade papers are required.

2. RELATED SPECIFICATIONS / DOCUMENTS

2.1 Reference is made in this specification to :

Sl. No.	Specification No. & Year	Nomenclature
(a)	IS 1060 (Part 1) : 1966 Reaffirmed 2009 AMD 5	Methods of Sampling and Test for Paper and Allied Products : Part 1
(b)	IS 1060 (Part 2) : 1960 Reaffirmed 2009	Methods of Sampling and Test for Paper and Allied Products : Part 2
(c)	IS 9335 (Part 2) : 1998 (First Revision) Reaffirmed 2006 AMD 3	Cellulosic Papers for Electrical Purposes - Part 2 : Methods of Test.
(d)	JSG 0114 : 1994	Methods of Tests for Textiles.

3. MANUFACTURE AND FINISH

3.1 Paper Presspahn Ammunition Grade 1 and Grade 2 shall be machine made from good quality manilla fibre, jute or kraft pulp. It shall be of even texture, well dried and friction glazed. It shall be free from bonding materials, sizing and shall be free from knots, lumps, cracks pinholes and other defects.

3.2 The material shall be supplied in sheets of such size as laid down in the terms of contract.

4. TENDER SAMPLE : The manufacturer / supplier / contractor shall submit a tender sample of 500 g in sheets or roll form (not less than 50 cm x 50 cm) conforming to this specification free of charges, to the Quality Assurance Officer / Quality Assurance Authority as stated in the tender. The sample shall be kept flat free from wrinkles and folds, 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 the 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 pre - inspection of the consignment as required above has not been carried out, the consignment may not be taken up for clearance.

6. QUALITY ASSURANCE

6.1 INSPECTION : Paper Presspahn Ammunition Grade 1 and Grade 2 and the packages in which it is packed as per Para 7.1, 7.2, 7.3 or terms of contract, shall be subject to inspection by and to the approval of the Quality Assurance Officer / Quality Assurance Authority.

6.2 SAMPLING

6.2.1 Not less than five percent of the packages shall be sampled. Four continuous representative sheets (not less than 500 g) shall be taken from each package.

6.2.2 The test sample not less than 500 g shall consist of sheets or roll form not less than 50 cm x 50 cm. The sample sheets shall be cut with edges parallel to the machine and cross directions of the paper respectively.

6.3 CRITERIA FOR CONFORMITY : If on examination, any sample is found not to conform to this specification, the whole batch / lot / consignment may be rejected.

6.4 TEST REQUIREMENTS

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

6.4.2 Chemical Requirements

Sl. No.	Characteristics	Requirements		Test Method / Reference to IS 1060 (Part 1 & 2)
		Gr 1	Gr 2	
(a)	Moisture content at 103 °C to 105 °C for 2 h, % by mass	9.0 Max.	8.0 Max.	Part 1 - 9

Sl. No.	Characteristics	Requirements		Test Method / Reference to IS 1060 (Part 1 & 2)
		Gr 1	Gr 2	
(b)	pH of water extract	5.5 Min. 7.5 Max.	6.0 Min. 8.0 Max.	Part 1 - 10
(c)	Water soluble Chlorides			
	(i) Calculated as NaCl, % by mass	0.05 Max.	-	Method 7 JSG 0114
	(ii) Calculated as Chloride ion, ppm	-	5.0 Max.	Clause 15, Method 1 of IS 9335(Part 2)
(d)	Water soluble Sulphates calculated as Anhydrous Na ₂ SO ₄ % by mass	0.25 Max.	0.1 Max.	Part 2 - 18
(e)	Fatty Acids and / or similar Acids calculated as Oleic Acid, % by mass	0.25 Max.	-	Part 2 - 19
(f)	Ash on incineration at 800 °C ± 25 °C, % by mass	2.5 Max.	1.0 Max.	Part 1 - 19
(g)	Conductivity of aqueous extract	-	10 m ² s/m Max.	Clause 13 of IS 9335 (Part 2)

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

6.4.3 Physical Requirements

6.4.3.1 The material shall be conditioned prior to test, for 24 h in an atmosphere of 65 % ± 2 % relative humidity at 27 °C ± 2 °C.

6.4.3.2 The physical requirements shall be according to the following table :

Sl. No.	Grade	Substance Grams per Square Meter	Bursting Strength kPa	Thickness in mm
(a)	Paper Presspahn Ammunition Grade I	272 ± 14	686.5 Min.	0.25 ± 0.03
		545 ± 25	882.6 Min.	0.50 ± 0.05

JSS 5970 - 11 : 2015
(Revision No. 2)

Sl. No.	Grade	Substance Grams per Square Meter	Bursting Strength kPa	Thickness in mm
(b)	Paper Presspahn Ammunition Grade 2	272 ± 14	686.5 Min.	0.25 ± 0.03
		545 ± 25	882.6 Min.	0.50 ± 0.05
(c)	*Paper Presspahn Ammunition Grade 1	2200 ± 110	-do-	2.0 ± 0.2

* This newly introduced variety is for Disc packing of 155 mm charge 8 & 9

7. WARRANTY : The stores supplied against the contract shall be deemed to have been warranted against the defective material and performance by the contractor / manufacturer for a period of one year from the date of receipt of the stores at the consignee's end and if during this period any of the stores supplied is found defective the same shall be replaced by the contractor / manufacturer, free of all 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 the ten such reams are to be wrapped in Hessian cloth to form a bale. The bale shall be placed between two suitable thick boards (wood or paper) one on top and one at bottom, and the assembly banded all round with iron hoop, for safe rail transit.

8.2 When the supply is required in rolls, each roll shall be wrapped in packing paper followed by Hessian cloth and hoop iron by bamboo strips.

9. MARKING

9.1 The outside of each package shall bear the Contractor's initials or recognised trade mark, contract number, date of supply, description of the paper as defined in the contract and serial number of package.

or

Packaging (Preservation, Identification and Packing) shall be in accordance with the terms of the contract.

10. STORAGE AND INSTALLATION LIFE : The paper shall be stored in packed condition as mentioned in Para 7 and unutilized material shall be retested after 5 years for all clauses / requirements to assess its suitability.

11. SAFETY OF OPERATIONS : Nothing in this specification shall relieve the contractor, supplier, manufacturer or user of his responsibility in the safety of his operations in handling, storage, transit or use of this store.

12. DEFENCE STORES CATALOGUE NUMBERS

12.1 Defence Stores Catalogue Numbers allotted to this store are as under :

Paper Presspahn Ammunition Grade 1 and Grade 2 :

Sl. No.	Items	Grade - 1	Grade - 2
(a)	For 0.25 mm Thick	5970 - 000 001	5970 - 002 856
(b)	For 0.50 mm Thick	5970 - 002 757	5970 - 002 857
(c)	For 2.00 mm Thick	5970 - 036 409	-

13. SUGGESTIONS FOR IMPROVEMENT

13.1 Any suggestion for improvement in this document may be forwarded to :

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