



भारत सरकार
GOVERNMENT OF INDIA

रक्षा मंत्रालय
MINISTRY OF DEFENCE

संयुक्त सेवा विनिर्देश
JOINT SERVICES SPECIFICATION

ON

PAPER KRAFT, AMMUNITION
(DS Cat. No.)

Paper Kraft, Ammunition 75 GSM	8135-000 004
Paper Kraft, Ammunition 100 GSM	8135-000 348
Paper Kraft, Ammunition 125 GSM	8135-000 349
Paper Kraft, Ammunition 170 GSM	8135-000 350

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RECORD OF AMENDMENTS

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

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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 JSS 8135-17 : 2016, (Revision No. 1)

- a) was prepared in the year 2002.
- b) is a revision of JSS 8135-17 : 2002, Reaffirmed 2010 and supersedes the same.

0.4 This specification would be used for Manufacture, Quality Assurance and Supply of Paper Kraft, Ammunition.

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 8135-17 : 2016
(Revision No. 1)

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 Paper Kraft, Ammunition suitable for use in wrapping ammunition components, explosives and for use in the manufacture of exploder tubes.

2 RELATED SPECIFICATIONS/DOCUMENTS

2.1 Reference is made in this specification to:

<i>S No.</i>	<i>Specification No. & Year</i>	<i>Nomenclature</i>
a)	IS 138 : 1992 (Third Revision) Reaffirmed 2014 AMD 1	Ready Mixed Paint, Marking, for Packages and Petrol Containers-Specification.
b)	IS 1060 (Part 1) : 1966 (Revised) Reaffirmed 2014 AMDS 5	Methods of Sampling and Test for Paper and Allied Products : Part 1
c)	IS 1060 (Part 2) : 1960 Reaffirmed 2014	Methods of Sampling and Test for Paper and Allied Products : Part 2
d)	JSG 0114 : 2015 (Revision No. 1)	Methods of Tests for Textiles used in Ammunition.

3 MANUFACTURE AND FINISH

3.1 The paper shall be unbleached pure kraft (pure sulphate paper) uniformly made, well sized and machine glazed. It shall be free from knots, lumps, cracks, pinholes or other defects.

3.2 The material 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 in sheets or roll form, 50 x 50 cm (250 g) conforming to this specification, free of all charge. The sample shall be kept flat, preferably rolled, free from wrinkles, 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 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 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 contiguous representative sheets shall be taken from each package. 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 taken 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:

Requirements of Paper Kraft, Ammunition

a) *Chemical*

<i>S No.</i>	<i>Characteristics</i>	<i>Passing Standard</i>	<i>Test Method</i>
a)	Moisture content at 103°C to 105°C for 1 h, % by mass	10.0 <i>Max</i>	IS 1060 (Part 1) Clause 9

<i>S No.</i>	<i>Characteristics</i>	<i>Passing Standard</i>	<i>Test Method</i>
b)	pH of aqueous extract	5.5 <i>Min</i> 7.5 <i>Max</i>	IS 1060 (Part 1) Clause 10
c)	Water soluble Chlorides calculated as Sodium chloride, % by mass	0.05 <i>Max</i>	JSG 0114 Method No.7
d)	Water soluble sulphates calculated as anhydrous Sodium sulphate, % by mass	0.40 <i>Max</i>	IS 1060 (Part 2) Clause 18
e)	Fatty and/or similar acids, calculated as Oleic acid, % by mass	0.25 <i>Max</i>	IS 1060 (Part 2) Clause 19
f)	The ash on incineration at 800°C ±25°C, % by mass	7.5 <i>Max</i>	IS 1060 (Part 1) Clause 11
g)	Alkalinity calculated as Calcium carbonate, % by mass	2.0 <i>Max</i>	Appendix 'A'
h)	Soluble Lead compounds calculated as Lead monoxide, % by mass	5.0 <i>Max</i>	Appendix 'B'

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

b) *Physical*

<i>S No.</i>	<i>Characteristics</i>		<i>Passing Standard</i>	<i>Test Method</i>
a)	Substance, g/m ²	i) 75 GSM ii) 100 GSM iii) 125 GSM iv) 170 GSM	75 ±4 100 ±5 125 ±5 170 ±10	IS 1060 (Part 1) Clause 6
b)	Bursting strength kPa, <i>Min</i>	i) 75 GSM ii) 100 GSM iii) 125 GSM iv) 170 GSM	205.9 274.6 308.9 343.2	IS 1060 (Part 1) Clause 12.6
c)	Breaking load on a 15 x 180 mm strip, Newton (kgf)			
	i) Machine direction	aa) 75 GSM ab) 100 GSM ac) 125 GSM ad) 170 GSM	59.0 (6) 69.0 (7) 78.0 (8) 88.0 (9)	IS 1060 (Part 1) Clause 12.4
	ii) Cross direction	aa) 75 GSM ab) 100 GSM ac) 125 GSM ad) 170 GSM	37 (3.8) 45 (4.6) 50 (5.1) 55 (5.6)	
d)	Stretch %, for all MD or CD		1.5 <i>Min</i>	

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

- a) Nomenclature and Specification Number of the Material.
- b) Name and Address of the Consignee.
- c) A/T. or S.O. Number and Date.
- d) Consignment Number.
- e) Batch No. and Date of Manufacture.
- f) Gross and Net Mass.
- g) Consecutive Number of Package and Total Number of Packages in Consignment.
- h) Date of Supply.
- j) 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 are as under:

<i>S No.</i>	<i>Variety</i>	<i>DS Cat. No.</i>
a)	Paper Kraft, Ammunition 75 GSM	8135-000 004
b)	Paper Kraft, Ammunition 100 GSM	8135-000 348
c)	Paper Kraft, Ammunition 125 GSM	8135-000 349
d)	Paper Kraft, Ammunition 170 GSM	8135-000 350

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

Appendix 'A'

A DETERMINATION OF ALKALINITY AS CALCIUM CARBONATE (CaCO₃)

A.1 5 g of the paper, cut into small pieces are placed in a stoppered cylinder containing 250 ml of N/50 Hydrochloric acid. The mixture is allowed to stand with occasional shaking for one hour. At the end of this period a portion of the solution is decanted and titrated with N/10 Sodium hydroxide using Bromophenol blue as indicator. Simultaneously run a blank experiment.

Calculation

$$\text{Alkalinity as CaCO}_3, \% \text{ by mass} = \text{Diff.} \times 0.005 \times F \times 100/M$$

Where:

Diff. = difference between sample and blank titration Reading.

F = Factor of 0.1N NaOH

M = Mass of sample taken

Appendix 'B'

B DETERMINATION OF SOLUBLE LEAD COMPOUNDS

B.1 Weighed quantity of the paper cut into small pieces, which has been dried at 100°C is shaken continuously for one hour at room temperature with 1000 times its mass of an aqueous solution of Hydrochloric acid, containing 0.25% by mass of Hydrogen chloride. The solution, after shaking is allowed to stand for one hour. Any dissolved Lead is then precipitated as Lead sulphide and weighed as Lead sulphate.

Calculation

Lead compounds calculated as = $A \times 0.736 \times 100/M$
Lead monoxide, % by mass

Where:

A = Mass of Lead sulphate.

M = Mass of sample taken.