



**GOVERNMENT OF INDIA
MINISTRY OF DEFENCE**

JOINT SERVICES SPECIFICATION

ON

BOX CLOTH/CLOTH ALL WOOL MELTON FINISH

(DS Cat No. 8305-000 001)

**JSS 8305-16:2009
(Revision No. 2)
(Supersedes JSS 8305-16:1998)**

**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. BR Gandhe, 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: -

Sl No.	Name & Designation	Organisation
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 K Raja, Jt Director	Dte Gen of Naval Armt, Naval HQ, New Delhi
5	Wg Cdr SZ Hussain	Dte of Armt & Safety Eqpt, Air HQ, New Delhi
6.	Dir EME (Armt)	DGEME, Army HQ, New Delhi
7.	Capt PV Varghese	DGNAI, Naval HQ, New Delhi
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9.	Shri KL. Tripathi P.Sc.O Deputy Controller	CQA (ME), Pune
10	Col AK Mehta, Jt Controller	CQA (Amn), Pune
11.	Col S.N Gupta	CQA (SA), Ichapur, West Bengal
12.	Col VK Sinha	CQA (W), Jabalpur
13.	Dr. SN Singh, 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.	-	Ordnance Factory Board (QC & Std), Kolkata
17.	Lt Col R K Talwar	Secretary ASSC

RECORDS OF AMENDMENTS

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

CONTENTS

	Page No.
0. <u>FOREWORD</u>	1
1. <u>SCOPE</u>	2
2. <u>RELATED SPECIFICATIONS</u>	2
3. <u>MANUFACTURE AND FINISH</u>	2
4. <u>TENDER SAMPLE</u>	3
5. <u>PRE-INSPECTION OF STORES/CONSIGNMENT</u>	3
6. <u>QUALITY ASSURANCE</u>	3
7. <u>WARRANTY</u>	6
8. <u>PACKAGING</u>	6
9. <u>MARKING</u>	6
10. <u>DEFENCE STORES CATALOGUE NUMBER</u>	7
11. <u>SAFETY OF OPERATIONS</u>	7
12. <u>SUGGESTION FOR IMPROVEMENT</u>	7
<u>APPENDIX 'A'</u>	8

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 revision of JSS 8305-16 : 1998 and supersedes the same.

0.4 This specification would be used for manufacture, supply and quality assurance of Box cloth/cloth all wool melton finish.

0.5 Quality Assurance Authority for the items covered by this specification is The Controller, Controllerate 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
'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- 110011

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

JSS 8305-16:2009
(Revision No. 2)
(Supersedes JSS 8305-16:1998)

1. SCOPE

1.1 This specification governs the manufacture, supply and Quality Assurance of Box cloth/cloth all wool melton finish suitable for use in the manufacture of washers for combustion time fuzes and other ammunition components.

2. RELATED SPECIFICATIONS

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
JSG 0114: 1997 (Revision No. 1)	Methods of tests for Textiles. used in Ammunition

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

Bureau of Indian Standards,
Manak Bhawan,
9. Bahadur Shah Zafar Marg,
New Dlehi – 110 002

or

their regional/branch offices

2.3 Copies of the Joint Services Guide 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- 110011

3. MANUFACTURE AND FINISH

3.1 The cloth shall be all wool of an approved blend, pure and free from vegetable matter. The cloth shall be woven in accordance with the details of weave width, length and mass as given in clause 6.4.1 No filling is allowed.

3.2 The minimum width of the cloth shall be as shown in the contract.

4. TENDER SAMPLE

4.1 The contractor shall submit one metre length of cloth of full width as sample, free of all charges, conforming to this specification.

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 alongwith 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 and the packages in which it is contained shall be subject to the inspection by and to the approval of the Quality Assurance Officer/Quality Assurance Authority.

6.2 Sampling

6.2.1 A sample piece shall be 30 cm in length and of full width. At least 3 such pieces shall be drawn from supply of 500/600 metres length of material. Samples of the material and the packages may be taken from any portion of a consignment.

6.3 Criteria for Conformity

6.3.1 If, on examination any sample is found not conforming to this specification, the whole batch may be rejected.

JSS 8305-16:2009
(Revision No. 2)
(Supersedes JSS 8305-16:1998)

6.4 Test Requirements

6.4.1 Samples taken from any portion of the consignment of material shall conform to clause 3 and in addition shall conform to the test requirements given below: -

Requirements of Box Cloth / Cloth All Wool Melton Finish

(a) Chemical

Sl. No.	Characteristic	Passing Standard	Test Method Refer to JSG 0114
1	2	3	4
(i)	Moisture at 105 to 110°C, per cent by mass	Max 10.0	4
(ii)	pH of water extract	Min 5.5 Max 7.5	6
(iii)	Water soluble chlorides calculated as Sodium chloride, per cent by mass	Max 0.1	7
(iv)	Water soluble Sulphates calculated as anhydrous Sodium sulphate, per cent by mass	Max 0.4	8
(v)	Matter soluble in Benzene Methyl alcohol mixture, per cent by mass	Max 2.5	9
(vi)	Ash on incineration, per cent by mass	Max 1.0	10

(b) Physical

Sl. No.	Characteristics	Requirements		Test Method
		Plain Weave	Double Plain weave with centre pick	
(a)	(b)	(c)	(d)	(e)
(i)	Description	All wool	All wool	-
(ii)	Warp ends per decimetre	Min157	303	-

JSS 8305-16:2009
(Revision No. 2)
(Supersedes JSS 8305-16:1998)

(iii)	Weft picks per decimetre	Min 149	177	-
(iv)	Mass per metre square in g	Min 484	968	Method 1 of JSG 0114
(v)	Thickness in mm :			Appendix 'A'
	Under 0.9 kg load	0.95 to 1.30	2.34 to 2.54	
	Under 6.8 kg load	0.65 to 1.00	1.94 to 2.14	
(vi)	Compressibility in mm	Max 0.30	0.40	Appendix 'A'
(vii)	Braking load in N :			Method 2A of JSG 0114 with a jaw distance 180 mm and width of test piece 170 mm
	(a) Warp way	Min 1089	2667	
	(b) Weft way	Min 800	1226	

Note: -

(a) All percentages shall be calculated on the dry mass of the material after drying to constant mass.

(b) The material shall be conditioned prior to physical test for 24 hours at 65 + 2% relative humidity and temperature 27⁰C + 2°C after exposing it to 100% relative humidity for 48 hours.

(c) Compressibility will be the difference of the values between Sl. No. v (a) and v (b) .

(d) Only 484 g per square metre material is to be used for washers for time rings of fuzes.

JSS 8305-16:2009
(Revision No. 2)
(Supersedes JSS 8305-16:1998)

7. WARRANTY

7.1 The store supplied against this specification shall conform to the terms and conditions of the contractual obligations stipulated in the supply order. The store shall be warranted for a minimum period of one year for keeping qualities and characteristics.

8. PACKAGING

8.1 Cloth All Wool Melton Finish shall be packed in continuous lengths as agreed to between the purchaser and supplier. Before packing each Roll shall be sprinkled uniformly with powdered Naphthalene (3 g for every metre length). Each roll thereafter will be wrapped all over with Polythene film. A suitable number of such rolls will be made into a bale and each bale will be wrapped in kraft paper and covered with close textured hessain. Each bale shall then be secured with iron bands in such a way that there is no damage to the contents.

8.2 The inclusion of any foreign matter or impurities in any of the packages shall render the whole consignment liable for rejection.

9. MARKING

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

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

9.2 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 this stores is 8305-000 001.

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. SUGGESTION FOR IMPROVEMENT

12.1 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.

A. METHOD OF TESTING THICKNESS

A.1 The instrument used for the measurement of thickness shall have a foot of 15 mm diameter and shall suitably indicate the thickness. The load shall be applied by means of lever system. The long arm may conveniently apply a total load of 1 kg through the foot to the cloth without added mass, so that by adding the appropriate mass this load may be increased to 7 kg. The indicator shall be read after the load has been applied for two minutes.

A.2 Three samples shall be tested viz.

- (a) One 300 mm x full width from the middle of the piece.
- (b) One 150 x 75 mm from each end of each piece under test.

A.3 Observations shall be made in five places on each large sample (no two places containing the same warp or weft threads) and similar observations shall be made on both small samples under 1 kg and 7 kg loads.