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GOVERNMENT OF INDIA

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MINISTRY OF DEFENCE

संयुक्त सेवा विनिर्देश
JOINT SERVICES SPECIFICATION

ON

THREAD, COTTON, SEWING

Issued by

मानकीकरण निदेशालय
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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 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 8310-02 : 2016, (Revision No. 3)

a) was revised in the year 1994.

b) is a revision of JSS 8310-02 : 2007, (Revision No. 2) and supersedes the same.

0.4 This specification would be used for Manufacture, Supply and Quality Assurance of Thread, Cotton, Sewing.

0.5 Quality Assurance Authority for the item covered in 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,
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New Delhi-110 011

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 Thread, Cotton, Sewing suitable for use for Ammunition purposes.

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)	JSG 0114 : 2015 (Revision No. 1)	Methods of Test for Textiles Used in Ammunition.

3 MANUFACTURE AND FINISH

3.1 The Thread, Cotton, Sewing shall be manufactured from carded or combed Egyptian cotton. The turns per metre in single and doubling shall be in the direction stated and of such number as to produce a balanced thread. The thread shall be of an equal thickness throughout and shall be free from any knots, short length and other defects. The thread shall be capable of being worked satisfactorily in a sewing machine. The thread shall satisfy practical trial test. The thread is to be supplied in tubes of 1000 metres length or any convenient length not less than 500 metres.

3.2 The construction may be one of the following:

- a) 16 tex x 6 (or 36s/6)
- b) 27 tex x 9 (or 22s/9)
- c) 16 tex x 27 (or 36s/27)
- d) 9.8 tex x 6 (or 60s/6)
- e) 98 tex x 3 (or 6s/3)
- f) 25 tex x 9 (or 24s/9)
- g) 98 tex x 4 (or 6s/4)
- h) 20 tex x 6 (or 30s/6)

3.3 The thread may be bleached, unbleached, dyed, undyed, proofed or unproofed or as laid down in the contract.

3.4 If it is dyed its shade shall be in accordance with the contract. The dye shall penetrate the thread throughout and shall be free from sulphur compounds. The dye used for colouring shall be compatible with explosives.

3.5 All mercerised threads shall be mercerised throughout the length of the thread.

3.6 The proofing agent and its method shall be as approved by the Inspecting Authority and should be declared by the contractor at the time of submission of sample or supply.

3.7 The proofed material shall be wax finished (not polished) to facilitate stitching.

4 TENDER SAMPLE

4.1 The manufacturer/supplier/contractor shall submit a tender sample not less than 100g or a full cop of 1000 metres free of all charges and conforming to this specification, to the Quality Assurance Authority/Quality Assurance Officer as stated in the contract.

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 is liable for rejection.

6 QUALITY ASSURANCE

6.1 Inspection

6.1.1 Thread Cotton Sewing and the packages in which it is packed shall be subject to inspection by and to the approval of the Quality Assurance Officer/Quality Assurance Authority.

6.2 Sampling

6.2.1 Five representative samples shall be drawn from each consignment. Each sample shall be not less than 25 g.

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 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 Para's:

6.4.2 Requirements of Thread Cotton Sewing

16 tex x 6, 27 tex x 9, 16 tex x 27 and 9.8 tex x 6

98 tex x 3, 25 tex x 9, 98 tex x 4, and 20 tex x 6

6.4.2.1 Chemical

6.4.2.2 General Requirements

<i>S No.</i>	<i>Characteristic</i>	<i>Passing Standard</i>	<i>Test Method Reference to JSG 0114</i>
a)	Moisture at 103°C to 105°C for 2 h, % by mass	8.5 Max	4
b)	pH of water extract	7.5 Max 5.5 Min	6
c)	Matter soluble in water, % by mass		
	i) Unproofed material	0.5 Max	
	ii) Proofed material	1.0 Max	
d)	Water soluble chlorides calculated as Sodium chloride, % by mass	0.05 Max	7
e)	Water soluble sulphates calculated as Sodium sulphate, % by mass	0.25 Max	8
f)	Ash on incineration in excess of ash due to proofing agents, % by mass	0.20 Max	10

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

6.4.2.3 *Proofing requirements*

<i>S No.</i>	<i>Proofing process and its characteristics</i>	<i>Passing Standard</i>	<i>Test Method Reference to JSG 0114</i>
a)	Salicylanilide process salicylanilide contents, % by mass	0.1 <i>Min</i>	21
b)	Copper catch process Copper content calculated as copper, % by mass	0.7 <i>Min</i>	22
c)	Chrome-copper process		
	i) Chromium content, calculated as Chromium %	0.5 <i>Min</i> 1.5 <i>Max</i>	23
	ii) Copper content calculated as Copper percent by mass (For 20 tex x 6(or 6/30s) and 27 tex x 9(or 9/22s))	0.2 <i>Min</i>	
d)	Chromium process, chromium content calculated as Chromium, % by mass	0.7 <i>Min</i> 1.0 <i>Max</i>	1.8
e)	Chromium and Iron together, % by mass	1.5 <i>Min</i>	18

6.4.2.4 *Effectiveness of proofing against mildew*

6.4.2.5 When tested by the method given in Appendix A to this specification, the material shall remain completely unaffected.

6.6 Physical

6.6.1 *General Requirements*

<i>S No.</i>	<i>Characteristics</i>	<i>Requirements</i>
a)	Balance of Twist 1.5 metre length extended between the hands and the ends slowly brought together	Loop formed shall not link, double or retwist number of loops formed 5 <i>Max</i>
b)	Fastness to light and washing	Not inferior to tender sample.

6.6.2 The material shall also conform to the following schedule:

<i>S No.</i>	<i>Threads</i>	<i>Construction</i>	<i>Min length per kg of finished thread meters</i>	<i>Min breaking strength of finished threads 60 cm between grips newton</i>	<i>Length per tube (or any other type of package such as reel, cheese, cop etc) metres.</i>
a)	16 tex x 6 (or 36s/6)	6 Chords (3 strands each 2 fold)	9070	22.26	500, 1000 or 1500

<i>S No.</i>	<i>Threads</i>	<i>Construction</i>	<i>Min length per kg of finished thread meters</i>	<i>Min breaking strength of finished threads 60 cm between grips newton</i>	<i>Length per tube (or any other type of package such as reel, cheese, cop etc) metres.</i>
b)	27 tex x 9 (or 22s/9)	9 Chords (3 strands each 3 fold)	3600	49.03	-do-
c)	16 tex x 27	27 Chords (3 strands each 9 fold)	2020	98.06	-do-
d)	9.8 tex x 6 (or 60s/6)	6 Chords (3 strands) each 2 fold)	15120	13.24	-do-
e)	98 tex x 3 (or 6s/3)	3 ply (3 strands single fold)	3100	68.64	-do-
f)	25 tex x 9 (or 24s/9)	9 Chords (3 strands each 3 fold)	4050	49.03	-do-
g)	98 tex x 4 (or 6s/4)	4 ply (4 strands each single fold)	2330	98	-do-
h)	20 tex x 6 (or 30s/6)	6 Chords (3 strands each 2 fold)	8063	*Type I -13.33 *Type II -8.89	-do-

NOTES-

1 The material shall be conditioned for 24 h prior to breaking load, in an atmosphere of 65% \pm 2% humidity at 27°C \pm 2°C.

2 The direction of twist is not mandatory and is for the guidance of the manufacturer. However, the same shall be intimated by the manufacturer at the time of submission of sample or supply.

3* Explanation of the two types threads for variety 20 tex x 6 (6/30s).

Type I Thread: Thread Cotton Sewing 6/30s (when used in lieu of thread Linen whited Brown No. 60/3).

Type II Thread: Thread Cotton Sewing 6/30s (when used in lieu of thread Linen machine-whited Brown No. 40/3).

7 WARRANTY

7.1 The stores supplied against this specification shall be deemed to bear warranty for 12 months from the date of receipt of store at consignee's end and against defective design/material/workmanship/performance. If during this period any of the stores supplied is found defective, the same shall be rectified/replaced by the contractor, free of charge, at the user's premises within a period of three months from date of intimation of defect.

8 PACKAGING

8.1 Suitable number of cops shall be packed in paper package or Carton and convenient number of such Packages/cartons shall be packed in wooden box.

9 MARKING

9.1 All packages containing the material shall be indelibly and legibly marked with the following details (as applicable):

- a) Nomenclature and Specification No. of the Material.
- b) Name and Address of the Consignee.
- c) A.T. or S.O. No. and Date.
- d) Consignment No.
- e) Lot/Batch No. and Date of Manufacture.
- f) Gross and Net Mass.
- g) Consecutive No. of Package and Total Number of Packages in the Consignment.
- h) Date of Supply.
- j) Manufacturer's/Supplier's/Contractor's initial 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.

10 SAFETY OF OPERATIONS

10.1 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.

11 DEFENCE STORES CATALOGUE NUMBER

11.1 Defence store catalogue numbers allotted to different varieties of Thread, Cotton, Sewing have been given in Appendix 'B'.

12 SUGGESTIONS 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

Appendix 'A'

EFFECTIVENESS OF PROOFING AGAINST MILDEW

A.1 5 length of the treated thread each 1 metre long, shall be taken, and tied into small hanks.

A.2 The hanks shall be placed in a petridish or similar receptacle together with 5 similar hanks of untreated thread previously boiled for 1/2 h in distilled water and dried. 10 hanks of thread will then be sprayed with a mixture of spores of the following fungi:

Pencillium (Cownpore) Stock culture	No. 55
Aspergillus fumigatus Stock culture	No. 3
Aspergillius niger Stock culture	No. 4
Chaetomium globosum Stock culture	No. 6
Nemoniella eachinata Stock culture	No. 30
Rhizous sp. Stock culture	No. 20

A.3 After inoculation the dish, uncovered, shall be subjected to a temperature of 25°C to 30°C and humidity of 90% to 100% for 14 days. If after this period the untreated thread show growth of fungi, whilst the treated thread is completely unaffected, the proofing, shall be considered satisfactory.

Appendix 'B'

DS CATALOGUE NUMBERS FOR THREAD COTTON SEWING

Finish Type	Bleached, Unproofed	Undyed, Unproofed	Dyed, Unproofed	Dyed, Proofed
16 tex x 6 (36 s/6)	8310-400001	8310-400009	8310-400017	8310-400025
27 tex x 9 (22 s/9)	8310-400002	8310 -400010	8310-400018	8310-400026
16 tex x 27 (30 s/27)	8310-400003	8310-400011	8310-400019	8310-400027
9.8 tex x 6 (60 s/6)	8310-400004	8310-400012	8310-400020	8310-400028
98 tex x 3 (6 s/3)	8310-400005	8310-400013	8310-400021	8310-400029
25 tex x 9 (24 s/9)	8310-400006	8310-400014	8310-400022	8310-400030
98 tex x 4 (6 s/4)	8310-400007	8310-400015	8310-400023	8310-400031
20 tex x 6 (30 s/6)	8310-400008	8310-400016	8310-400024	8310-400032