

**DIRECTORATE OF STANDARDISATION
DEPARTMENT OF DEFENCE PRODUCTION
MINISTRY OF DEFENCE
'H' - BLOCK, NIRMAN BHAVAN, P.O.
NEW DELHI - 110 011**



रक्षा मंत्रालय
MINISTRY OF DEFENCE

संयुक्त सेवा स्पेसिफिकेशन
JOINT SERVICES SPECIFICATION

ON

SOCKS, MEN'S, WOOL HEAVY, KHAKI / BLUE GREY, RAISED

(DS CAT No. 8440 - 000 308)
(DS CAT No. 8440 - 000 310)
(DS CAT No. 8440 - 000 312)
(DS CAT No. 8440 - 000 316)
(DS CAT No. 8440 - 000 318)
(DS CAT No. 8440 - 000 320)

JSS 8440 - 03 : 2013
(Revision No. 4)

Issued by

मानकीकरण निदेशालय
रक्षा उत्पादन विभाग, रक्षा मंत्रालय,
'एच' ब्लॉक, डाकघर निर्माण भवन
नई दिल्ली - 110 011

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

Rs. 170/-

LIST OF MEMBERS ASSOCIATED WITH FORMULATION OF THIS STANDARD

1. The revision of this Joint Services Specification has been approved by Shri Sanjeev Kapur Addl DGQA (S), Chairman, Stores Standardisation Sub - Committee.

2. The following members have been associated in preparing the document : -

Sl. No.	Name and Designation	Organisation
(a)	Wg Cdr SKS Gosain, JDQAS (S & C)	DQAS (Aero) / Air HQ
(b)	S. Chakraborty, SSO - I	CQA (T & C)
(c)	Dr. S. K. Pandey, SSO - II	CQA (M)
(d)	Shri C.B. Pandey, JAG (NFSG)	CQA (PP)
(e)	Shri D K Pujari, SSO - I	CQA (GS)
(f)	Cdr. Naveen Kumar (IN)	DQA (N)
(g)	Shri Jarnail Singh, Dy Director	DGAQA
(h)	Sh. Suraj Raj, SSO - II	DGAQA
(j)	Maj. S. Bansal, DD OS (PII)	MGO / CP Cell / OS Dte.
(k)	Shri A K Handa, Jt Dir. Std Cell (Army)	MGO Br / EM / GS & C
(l)	Wg Cdr Chaturvedi, Deputy Director	Dte of Stores / Air HQ
(m)	Lt. Col Pankaj Bisht, Jt Dir EM (Std) (Army Std Cell)	MGO / EM / Std
(n)	Shri BL Jatav - NSO	NHQ / DCV
(o)	Cdr R Venkatesan, JDME	NHQ / DOS (E)
(p)	Dr. D N Tripathi, Sc. 'F'	DMSRDE
(q)	Shri S B Yadav, Sc. 'F'	DMSRDE
(r)	Cdr. Manish-Singh (JDLS)	JDLS
(s)	Shri S.K. Bandyopadhyay, JGM	OEF, Kanpur
(t)	Shri Ajay Satija, AE (QA)	DSC, Kanpur
(u)	Lt. Col. Parveen Deo	Secy, SSSC

JSS 8440 - 03 : 2013
(Revision No. 4)

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

RAKSHA MANTRALAYA / MINISTRY OF DEFENCE
MANAKIKARAN NIDESHALAYA / DTE OF STANDARDISATION
(STORES STANDARDISATION SUB-COMMITTEE)

No. of sheet : (Three)
 Authority : As shown in col.4

२५। लोकपाल निदेशालय
Directorate of Standardisation,
राष्ट्र प्रसारण, नई दिल्ली
Ministry of Defence, New Delhi

JSS& Year	Nomenclature	Details of Amendment	Authority for Amendment						
1	2	3	4						
JSS 8440-03:2013 (Revision No. 4)	Socks Mens Wool Heavy Khaki/Blue Grey Raised DS Cat .No 8440 - 000 308 - 000 310 - 000 312 - 000 316 - 000 318 - 000 320	(1) Page No. 3, 4 & 5 Sub Clause 2.1 at Serial No.,(d),(e),(f),(g),(m),(n),(o) & (u) under the Column Specification No. as under : <table><tr><td><u>FOR</u></td><td>(d)</td><td>Existing</td></tr><tr><td><u>READ</u></td><td></td><td>IS 971:1983 (First Revision) Reaffirmed 2009 AMD-1</td></tr></table>	<u>FOR</u>	(d)	Existing	<u>READ</u>		IS 971:1983 (First Revision) Reaffirmed 2009 AMD-1	CQA(T&C) Kanpur letter No.C/8104/ Adopted JSS/TC-3 dt 17/09/ 2014
<u>FOR</u>	(d)	Existing							
<u>READ</u>		IS 971:1983 (First Revision) Reaffirmed 2009 AMD-1							
		<table><tr><td><u>FOR</u></td><td>(e)</td><td>Existing</td></tr><tr><td><u>READ</u></td><td></td><td>deleted</td></tr></table>	<u>FOR</u>	(e)	Existing	<u>READ</u>		deleted	
<u>FOR</u>	(e)	Existing							
<u>READ</u>		deleted							

Asst. Director (T.C.)
Directorate of Standardisation
Ministry of Defence, New Delhi

JSS 8440-03:2013
(Revision No.4)

Socks Mens Wool Heavy
Khaki/Blue Grey Raised
DS Cat.No 8440 - 000 308
- 000 310
- 000 312
- 000 316
- 000 318
- 000 320

<u>FOR</u>	(i)	Existing
<u>READ</u>		IS 1313:1984 (First Revision) Reaffirmed 2013
<u>FOR</u>	(j)	Existing
<u>READ</u>		IS 1912:1984 (Second Revision) Reaffirmed 2007
<u>FOR</u>	(m)	Existing
<u>READ</u>		IS 2454:1985 (First Revision) Reaffirmed 2013
<u>FOR</u>	(r)	Existing
<u>READ</u>		deleted
<u>FOR</u>	(t)	Existing
<u>READ</u>		deleted

COA(T&C) Kanpur
letter No. G/8104/
Adopted JSS/TC-3
dt 17/09/2014

JSS 8440-03-2013
(Revision No.4)

Socks Mens Wool Heavy
Khaki/Blue Grey Raised
DS Cat.No 8440 - 000 308
- 000 310
- 000 312
- 000 316
- 000 318
- 000 320

FOR	(u)	Existing
READ		deleted

(2) Page No. 7 Sub Clause 9.1 heading Quality Assurance at Srl No. 1 (b) (ii) under the column(2) Test as under:-

FOR	1(b)	Existing
READ	(ii)	% Shrinkage of Socks in the length of Foot Max

CQA(T&C) Kanpur
letter No.G/8104/
Adopted JSS/TC-3
dt 17/09/ 2014

Sl. No.	CONTENTS	Page No.
0.	FOREWORD	1 - 2
1.	SCOPE	3
2.	RELATED SPECIFICATIONS	3 - 5
3.	MATERIALS	5
4.	STANDARD PATTERN	5
5.	MANUFACTURE	5
6.	WORKMANSHIP AND FINISH	6
7.	DIMENSIONS AND OTHER DETAILS	6
8.	PRE - INSPECTION OF STORES / CONSIGNMENT	6
9.	QUALITY ASSURANCE	7 - 8
10.	MARKING	8
11.	SAMPLING	8 - 9
12.	CRITERIA FOR CONFORMITY	10
13.	WARRANTY	10
14.	PACKING - MODULAR PACKING	10 - 11
15.	DEFENCE STORES CATALOGUE NUMBERS	11
16.	SUGGESTIONS FOR IMPROVEMENT	11
17.	APPENDICES 'A' TO 'B'	12 - 13
18.	DRAWING	14

Directorate of Standardisation,
Ministry of Defence,
New Delhi - 110 011

0. **FOREWORD**

0.1 This specification has been prepared by Stores Standardisation Sub - Committee on the authority of 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 a revision of JSS 8440 - 03 : 2008 (Revision No. 3) and supersedes the same.

0.4 This specification shall be used to Guide, Design, Manufacture, Quality Assurance and Procurement of the item.

0.5 Quality Assurance Authorities for the item covered in this specification are CQA (T & C), Kanpur, and DQAS (Aero), New Delhi for Army, and Air Force respectively. 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 Bhavan PO,
New Delhi - 110 011

0.6 Non - registered users can obtain the following on payment :-

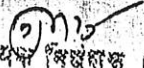
(a) **Copies of IS from :-**

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

(b) **Copies of JSS / JSG from :-**

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

JSS 8440 - 03 : 2013
(Revision No. 4)

प्रमाणन निदेशक (सकल) 
Asstt. Director (T.C.)
मानकीकरण निदेशालय
Directorate of Standardisation
संरक्षा मंत्रालय, नई दिल्ली,
Min. of Defence, New Delhi.

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

Directorate of Standardisation Website

www.defstand.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.defstand.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 covers the requirements of Socks, Men's Wool, Heavy Khaki / Blue Grey, Raised of various sizes intended to be used as close fitting covering for the feet and lower part of the Legs. While socks in khaki shade are meant for Army, Socks in Blue Grey Shade are for Air Force.

2. **RELATED SPECIFICATIONS**

2.1 Reference is made in this specification to :-

Sl. No.	Specification No.	Nomenclature
(a)	IS 539 : 1974 (Second Revision) Reaffirmed - 2011 Amd - 1	Specification for Naphthalene
(b)	IS / ISO - 105 - C 10 : 2006	Textiles - Tests for Colour Fastness : Part C 10 : Colour Fastness to Washing with Soap or Soap and Soda
(c)	IS 744 : 2000 (Third Revision) - Reaffirmed - 2010	Textiles - Methods for Determination of Wool Fibre Diameter, Percentage of Medullated Fibres and Kemp Fibre
(d)	IS 971 : 1983 (First Revision) Reaffirmed 2004 Amd - 1	Method for determination of colour fastness of textile materials to perspiration
(e)	IS 1029 : 1970 (First Revision) Reaffirmed - 2008 Amd - 3	Specification for Hot Rolled Steel Strips (Baling)
(f)	IS 1313 : 1984 (First Revision) Reaffirmed 2003	Method for determination of dimensional changes on washing of knitted goods containing wool
(g)	IS 1390 : 1983 (First Revision) Reaffirmed - 2009	Methods for determination of pH value of aqueous extracts of textile materials
(h)	IS 1720 : 1978 (First Revision) Reaffirmed - 2012	Specification for Cotton Sewing Threads

JSS 8440 - 03 : 2013
(Revision No. 4)

प्रमुख निदेशक (सकल व्यवसाय)
Joint Director (T.C.)
सर्वोच्च न्यायालय
Directorate of Standardisation
सहायक निदेशक, नई दिल्ली
Min. of Defence, New Delhi-110011

Sl. No.	Specification No.	Nomenclature
(j)	IS 1912 : 1984 (Second Revision) Reaffirmed - 2011 Amd - 1	Specification for Country Jute Twine
(k)	IS 2005 : 1988 (First Revision) Reaffirmed 2009 Amd 2	Method for quantitative chemical analysis of binary mixtures of nylon 6 or nylon 6.6 fibres and certain other fibres
(l)	IS 2006 : 1988 (Second Revision) Reaffirmed 2009 Amds 2	Method for quantitative chemical analysis of binary mixtures of protein fibers with certain other no - protein fibres
(m)	IS 2454 : 1985 (First Revision) Reaffirmed - 2010 Amd - 1	Methods for determination colour fastness of textile materials to artificial light (xenon lamp)
(n)	IS 2508 : 1984 (Second Revision) Reaffirmed - 2008 Amd - 3	Specification for Low Density polyethylene Films
(o)	IS 2771 : Part 1 : 1990 (Second Revision) Reaffirmed - 2008 Amd - 3	Corrugated Fibreboard Boxes - specification : Part 1 : General Requirements
(p)	IS 4905 : 1968 Reaffirmed - 2011 Amd - 1	Methods for random sampling
(q)	IS 5911 : 1977 (First Revision) Reaffirmed 2008	Fineness grades of wool tops
(r)	IS 11652 : 2000 (Second Revision) Reaffirmed 2010	Textiles - Woven sacks for packing cement high density polyethylene (HDPE) / Poly Propylene (PP) - Specification

Sl. No.	Specification No.	Nomenclature
(t)	INDIGENOUS / TEXTILES & CLOTHING / 2123 (b)	Laminated hessian cloth
(u)	CQA (GS) / US / 460	CQA (GS) / US / 460
(v)	JSS 8135 - 10 : 2004 (Revision No. 1) Reaffirmed - 2011 Amd - 1	Polypropylene Strapping, 12 mm wide
(w)	Specn. No. CQA (GS) / US / 460	Boxes, fibreboard, rigid corrugated triple wall 7 ply various sizes.

2.2 Copies of IND / TC specification and prov specification S / 5570 / TC - 12 are obtainable on payment from :-

The Controller,
Controllerate of Quality Assurance (Textiles & Clothing),
Post Box No. 294,
Kanpur - 208 004.

2.3 Copies of CIGS / US series of specification is obtainable on payment from :-

The Controller,
Controllerate of Quality Assurance (GS),
Post Box No. 127,
Kanpur - 208 001.

3. MATERIALS

3.1 The worsted yarn shall be of 80 tex x 3 count, composed of 80 % wool and 20 % Crimped Nylon. The grade of wool shall be 48^s. The average fibre length of the wool shall be not less than 80 mm. The Crimped Nylon shall be of 0.33 to 0.44 tex and 80 to 120 mm in staple length. The worsted yarn shall conform to the particulars given in prov. Specn No S / 5570 yarn Socks Heavy Raised / TC - 12.

4. STANDARD PATTERN

4.1 The standard sealed pattern held by the Controllerate of Quality Assurance (Textiles & Clothing), Post Box No. 294, Kanpur - 208 004, shall constitute the standard as regards any particulars or properties not noted or defined in this specification.

5. MANUFACTURE

5.1 The socks shall be knitted 2 ply of 80 tex x 3 worsted yarn. The leg for a distance of 14 cm and foot portion shall be spliced with a 50 tex x 3 cotton yarn conforming to IS 1720 : (Variety No. 8) or a suitable nylon yarn as approved by the Quality Assurance Authority.

- 5.2 The heel and toe portions shall be strengthened by an additional splicing of nylon yarn.
- 5.3 The rib top of the socks shall be knitted in one x one rib knit and the rest in plain knit. The construction shall be so adjusted as to provide sufficient elasticity and stretch ability to the socks even after raised finish.
- 5.4 The heel shall be constructed on half the diameter of the machine with half the number of total needles. In the heel, one needle shall be decreased after each course until 6 needles on each side have been lifted out of action. After this all the needles lifted out of action shall be brought in action gradually by lowering one needle at each course. A similar procedure shall be adopted for the construction of toe also. The socks shall be securely closed at the toe by linking with 2 ply of 80 tex x 3 worsted yarn.
- 5.5 The socks shall be scoured clean and shall be free from stains and impurities of any kind. They shall be rendered shrink resistant by a suitable process acceptable to the Quality Assurance Officer or shall be knitted from yarns which have been previously treated for shrink resistance. The socks shall be boarded on boards of corresponding sizes and shall not be pressed hard.
- 5.6 The socks except rib top portion shall be raised both on the inner and outer surface and the thickness shall conform to the sealed pattern held by the Quality Assurance Authority.

6. WORKMANSHIP AND FINISH

- 6.1 The general workmanship and finish of the socks shall be of high standard and shall match to the standard sealed pattern held by the Quality Assurance Authority.

7. DIMENSIONS AND OTHER DETAILS

- 7.1 The socks shall conform to the schedule of particulars given in Appendix 'A'

8. PRE - INSPECTION OF STORES / CONSIGNMENT

- 8.1 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.

- 8.2 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.

9. QUALITY ASSURANCE

9.1 On examination, the samples taken from any portion of consignment shall show that the socks conform to the following requirements when tested in accordance with the method mentioned against each :-

Sl. No.	Tests	Requirements	Method (refer to)
1	2	3	4
(a)	Dimensional change due to relaxation shrinkage percentage (i) Shrinkage of socks in the length of leg, percent, Max (ii) Shrinkage of socks in length of Foot, percent, Max	3 2.5	IS 1313 : 1984 (Appendix 'B')
(b)	Felting shrinkage (on milling when the shrinkage is determined separately for leg and foot portion) (i) Percentage shrinkage of socks in the length of leg, Max (ii) Percentage shrinkage of socks in the length of leg, Max Note : No single shrinkage test result shall exceed 15 % in the leg and 10 % in the foot.	10 7	IS 1313 : 1984
(c)	Loss on scouring, percent, Max	4	Clause 6 of IS 2360 : 1977
(d)	Fastness of dye to washing	Rating 4 or better	IS / ISO 105 - C 10 : 2006
(e)	Fastness of dye to light	Rating 4 or better	IS 2454 (Carbon Arc Atlas fadeometer may also be used)
(f)	Fastness of dye to perspiration	Rating 4 or better	IS 971 : 1983
(g)	pH value of aqueous extract, Min Max	5.0 7.5	IS 1390 : 1983 (cold method)
(h)	Composition (for yarn worsted; 80 tex / 3 khaki / Blue / Grey) (i) Percentage wool	80 ± 2	IS 2006 : 1988 (dry method)
	(ii) Percentage nylon	20 ± 2	IS 2005 : 1988

Sl. No.	Tests	Requirements	Method (refer to)
1	2	3	4
(j)	Grade of wool (when determined from finished socks)	48 ^s as per IS 5911 : 1977 except Clause 1.2	IS 744 : 2000

10. MARKING

10.1 Each sock shall be legibly and indelibly stamped in 1.3 cm letters for size and with identification number allotted to each firm alongwith DS Cat Number of the store.

11. SAMPLING

11.1 The supplier shall offer the store serially numbered (in bundles of 10) and arranged in such a way that the entire lot is accessible to the Quality Assurance Officer.

11.2 The number of sample units shall be drawn by the Quality Assurance Officer for preliminary examination as per table I.

TABLE - I
SAMPLING PLANS FOR SOCKS

(Based on AQL 4 %, Authority - ISO 2859)

Lot size defined in terms of samples unit like No. of bolts, bales, bundles & boxes	Sampling Plan for					
	Visual Parameters		Physical Parameters (for laboratory testes)		Chemical Parameters and other physical parameters requiring long time (for laboratory tests)	
	Sample size	Acceptance No.	Sample size	Acceptance No.	Sample size	Acceptance No.
1	2	3	4	5	6	7
Below 150	13	1	13	1	3	0
151 to 280	13	1	13	1	5	0
281 to 500	20	2	13	1	5	0
501 to 1200	32	3	20	2	5	0
1201 to 3200	50	5	32	3	13	1

NOTE :-

(1) Sampling Officer will select sampling unit randomly and select one ultimate items from each sampling unit.

(2) Sample for lab testing will be drawn from the samples drawn as mentioned in column (2) only.

(3) For chemical parameters samples to be drawn at random as per IS 4905 : 1968 from these samples drawn as per column 4.

(4) Time consuming physical parameters are (i) Shrinkage (ii) Quality of wool (In case indigenous wool of 48^S grade and coarser than that only).

(5) Lot size restricted to 32,000 pairs.

(D) 11
 Asst. Director (I.C.)
 Directorate of Standardisation
 Ministry of Defence, New Delhi-11

12. CRITERIA FOR CONFORMITY

12.1 All the sample units drawn shall be tested / examined to the relevant specification requirements. If all the sample units are found to conform to the requirements of this specification, the supply would be considered to be in conformity otherwise not.

13. WARRANTY

13.1 The stores supplied against this specification shall be deemed to bear the warranty of the contractor against defective material and performance for a period of 12 months from the date of receipt of stores at consignee's depot. If during this period, the stores supplied are found to be so defective, the same shall be replaced immediately with serviceable stores by the contractor at site, free of any charges or cost.

14. PACKING - (MODULAR PACKING)

14.1 New packing system (modular packing) has been introduced in place of existing packing. The store shall be delivered / packed in new, clean dry condition. The store of same size shall be packed in one package.

14.2 Method of Packing

(a) Each pair of socks shall be kept in a self - sealing / self - adhesive 0.04 mm thick polythene bag as per IS 2508 : 1984. An adequate quantity of naphthalene ball also kept in the bag as preservative.

(b) Suitable No. of pack tie with Jute twine or polypropylene twin to form a bundle.

(c) Suitable No. of such unit bundle shall be packed in a 5 ply inner box of dimension (L x B x H) 420 x 330 x 375 mm as per IS 2771 : Part 1 : 1990.

(d) Two such inner box shall be packed in an outer box of dimension (L x B x H) 700 x 450 x 400 mm as per specification No. CQA (GS) / US / 460.

(e) The outer box will be covered by HDPE bag size 750 x 500 x 1000 mm as per IS 11652 : 2000.

(f) Outer box shall be bound with two band of polypropylene strapping of 12 mm wide and 0.5 mm thick conforming to JSS 8135 - 10 : 2004 across length and width the joint shall be heat sealed or punch with metal clip.

14.3 Marking of Package

14.3.1 Before despatch, each package shall be legibly and indelibly marked by stencil showing the following details : -

- (a) Nomenclature and DS Cat. number of the store.
- (b) Quantity packed in the bale.
- (c) Batch number and date.
- (d) Month and year of packing.
- (e) Name or trade mark of manufacture.
- (f) Gross mass in kg.
- (g) Inspection note number and date.
- (h) Contract number and date.
- (j) Name and address of the consignee.
- (k) Naphthalene Preserved.

15. **DEFENCE STORES CATALOGUE NUMBER**

15.1 The stores covered by this specification shall bear the following DS Cat Numbers :-

Sl. No.	DS Cat Number	Nomenclature of store
(a)	8440 - 000 316	Socks, Men's, Wool, Heavy, Khaki, Raised size 27
(b)	8440 - 000 318	Socks, Men's, Wool, Heavy, Khaki, Raised size 29
(c)	8440 - 000 320	Socks, Men's, Wool, Heavy, Khaki, Raised size 31
(d)	8440 - 000 308	Socks, Men's, Wool, Heavy, Blue Grey, Raised size 27
(e)	8440 - 000 310	Socks, Men's, Wool, Heavy, Blue Grey, Raised size 29
(f)	8440 - 000 312	Socks, Men's, Wool, Heavy, Blue Grey, Raised size 31

16. **SUGGESTIONS FOR IMPROVEMENT**

16.1 Any suggestions for improvement of this document may be forwarded to :-

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

Chief Engineer (Technical)
Chief Engineer (D.O.)
Directorate of Standards
Ministry of Defence, New Delhi-11

Appendix 'B'

B. METHOD FOR DETERMINATION OF BOARDING SHRINKAGE

B.1 Procedure

B.1.1 The original dimensions of test specimen shall be measured and then soaked in a shallow tray containing twenty times its mass of water at room temperature for two hours. After this period surplus water shall be drained out and specimen measured with steel rule while immersed in water, care being taken to avoid distortion or stretching. The water level in the tray shall be just sufficient to keep the socks submerged. Minimum three determinations of each dimensions shall be made and the average shall be taken as the measurement. The difference between the original and relaxed dimensions expressed as percentage of the former shall be regarded as boarding shrinkage. For the determination of boarding shrinkage the entire length for the length of leg and foot shall be taken into consideration.

APPENDIX 'A'

**SCHEDULE OF MEASUREMENTS AND MASS OF SOCKS, WOOL, HEAVY
KHAKI / BLUE GREY, RAISED**

Size No In cm	No of Courses per 5 cm (Spliced Position)	Measurements in centimetre			Depth of rib top	Number of needles	Diameter of machine in cm (Approx)	Mass per 10 pairs in 'g' Min
		Length of leg	Length of foot	Width of foot at centre				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
27	13	36	27	13	12	44	13	1390
29	13	38	29	14	13	48	14	1590
31	13	40	31	14	13	52	14	1815
Tolerances		+2.5 cm - 1.0 cm	± 1 cm	-	-	-	-	-

NOTE: (1) All measurements shall be taken on flat surface without stretching at the position indicated in the drawing.

(2) The mass specified shall be obtained after conditioning the samples in an atmosphere of $65 \pm 2\%$ relative humidity and a temperature of $27 \pm 2^\circ\text{C}$. Minus tolerance of 3 % in mass will be permissible on individual pair of Socks, provided the average is maintained in each size in each consignment.

SOCKS, MEN'S, WOOL, HEAVY KHAKI / BLUE-GREY, RAISED		SCALE	
APPROVED		DIRECTOR	
JSS No. 8440 - 03 : 2008 (REV. No. 2)		SHEET No. 1 OF 1	
D.S. CAT. No. -		JSS No. 8440 - 03 : 2008 (REV. No. 2)	
DIMENSIONS IN CENTIMETER		NAME	
DATE		DGN	
R.DRN		CHD	
TRD		COMP	
AVAY KUMAR		AVAY KUMAR	

D.S. CAT. No.	SIZE	A	B	C	D
8440-000316	27	36	27	13	12
8440-000318	29	38	29	14	13
8440-000320	31	40	31	14	13

