

No. U-II-25/2011-12-Prov-(CoBRA)
 Government of India/भारत सरकार
 Ministry of Home Affairs/गृह मंत्रालय
 Police Modernization Division/पुलिस आधुनिकीकरण प्रभाग
 Prov.I Desk/संभरण-I डेस्क

26, Mansingh Road, Jaisalmer House,
 New Delhi, the 11th February, 2013

DsG : AR/BSF/CISF/CRPF/ITBP/NSG/SSB & BPR&D

Subject : QRs/Specification of 14 various Clothing items.

The QRs/Specification of following 14 items as per annexures have been approved by the Competent authority in MHA:

- i. Socks woollen heavy (Annex. B).
- ii. Hand Gloves Knitted (Annex. C)
- iii. Cotton Terry Towel (Sky Blue Color)/Hand Towel (Annex. D)
- iv. Scoured and bleached rib knitted round neck sleeveless and short sleeve vests/Vest Cotton (Annex. E)
- v. Water Bottle(Annex. F)
- vi. Trouser BD Serge Cloth/Cloth Trouser BD (Annex. G)
- vii. Shirt Angola Cloth./Shirt Angola (Annex. H)
- viii. Cap Comforter Woollen(Annex. I)
- ix. Under Pant Thermal/ Under Pant Woollen (Annex. J)
- x. Vest Thermal/Vest Woollen (Annex. K)
- xi. Coat Parka (Annex. L)
- xii. Beret Cap (Annex. M)
- xiii. Rain Cape(Annex. O)
- xiv. Blanket Air Force Blue (Annex. S)

2. Henceforth, all CAPFs should procure the above items required by them, strictly as per the laid down QRs/Specifications.

widm 5/12
13/2/2013

Yours faithfully,

Tilak Raj
 (Tilak Raj)

Under Secretary to the Govt. of India

O/C

Encl : As above.

Copy to :

1. SO, IT Cell, MHA - with the request to host the above QRs/Specification on the official website of MHA (under the page of Organizational set up, Police Modernization Division) and confirm to this Division. Softcopy is being sent separately.
2. Director(Procurement), MHA

Copy for information to PS to JS(PM).

CENTRAL RESERVE POLICE FORCE STANDARD

SPECIFICATION FOR "SOCKS WOOLEN HEAVY"

Submitted to :

**Office of the Director General of Police,
CRPF, Ministry of Home Block No-1, CGO
Complex, Lodhi Road,
New Delhi-03**

Prepared by :

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SPECIFICATION FOR "SOCKS WOOLEN HEAVY"**RECORD OF AMENDMENTS**

Amendment No. and Date	Amendment pertains to SI.No./Para No./Column No.	Authority	Amended by Name and Appointment (in block letter)	Signature and Date

PREAMBLE

The Inspector General of Police, CRPF, has asked NITRA to prepare technical specifications for specification for "Socks woolen Heavy" in khaki colour. The specification describes the performance requirements and material properties – course/dm, mass, yarn Count, composition, dimensions, color fastness to light, color fastness to washing, color fastness to perspiration, colour fastness to rubbing, pH, dimensional change due to relaxation, stretch measurement etc. Bureau of Indian Standards (BIS) and American Association of Textile Chemists and Colorists (AATCC) test methods are considered to draw this specification.

This report contains 11 pages which describe the technical specifications of "Socks woolen Heavy" for CRPF.

Whenever a reference to any other standard occurs in this specification, it shall be taken as reference to the latest version of that standard existing at the time of finalization of a contract.

This technical specification will enable the CRPF to prepare tender documents (technical details) at the time of placing orders for "Socks woolen Heavy" and final inspection as well.

SPECIFICATION FOR "SOCKS WOOLEN HEAVY"

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0.0 FORWARD

- 0.0 This specification has been prepared by Office of the Directorate General of Police, CRPF on the authority of The Director General of Police, CRPF.
- 0.1 This specification is for use by the CRPF.
- 0.2 This specification would be used for manufacture, quality assurance and procurement of the item.
- 0.3 Quality assurance authority for the item covered in this specification is Office of the Directorate General of Police, CRPF, New Delhi. All enquiries regarding this specification, including those relating to any contractual conditions contained therein shall be addressed to the Quality Assurance authority at the following address:
- Office of the Directorate General of Police,
CRPF, Ministry of Home Block No-1, CGO Complex, Lodhi Road,
New Delhi-03
- 0.4 Copies of the specification can be obtained from:
- Office of the Directorate General of Police,
CRPF, Ministry of Home Block No-1, CGO Complex, Lodhi Road,
New Delhi-03
- 0.5 This specification holds good only for the supply order for which it is issued.
- 0.6 The Quality Assurance Authority reserves the right to amend or modify this specification as and when required.
- 0.7 The Quality Assurance Authority is the competent authority to grant concessions, if any, in respect of any clause contained in this specification.
- 0.8 For the purpose of deciding whether a particular requirement of this specification is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS:2-1960 (Reaffirmed 2006). The number of significant places retained in the rounded off value should be the same as that of the specified value in this specification.

1.0 SCOPE

- 1.1 This specification covers the requirement for “Socks woolen Heavy” in khaki colour against CRPF requirements.
- 1.2 This specification does not specify general appearance, feel etc of the socks.

2.0 MATERIAL

The yarn used in the manufacture of the Socks shall be spun on worsted system from the blend of 85% wool tops (dyed in khakhi shade) and 15% nylon tops(dyed in khakhi shade). For guidance 40/2 Ne nylon yarn of matching colour with socks may be used as linking yarn. Following are the particular of yarn used to manufacture “Socks woolen Heavy” :

Knitting and Plaiting yarn:

Knitting yarn	
Fibre composition	85 % wool and 15% Nylon (Tolerance ±2%)
Wool Fibre length	80 mm minimum
Wool grade	Not less than 58s
Nylon 6 fibre length	80-120 mm
Count for guidance	18 Ne
Plaiting yarn	
Fibre composition	100% Nylon Filament
Count for guidance	150 Denier

3.0 MANUFACTURE

- 3.1 The shape, dimensions and design of the socks are shown in Fig. 1.
- 3.2 The socks shall be well knit using Terry knit structure. The socks shall be spliced throughout the foot and the leg up to the portion marked in the Fig. 1 (up to the line SR in the figure) . The linking shall be even, free from creases and folds. The socks shall be linked over the toe. The linking shall be elastic, smooth and free from lumps and knots. The free end of the linking yarn shall be securely fastened off. The socks shall be free from manufacturing defects such as broken threads in the body, large mends, ladders, dropped stitches, holes, cut, tear and any other defect, which may significantly affect the appearance and serviceability of socks.
- 3.3 For guidance circular socks knitting machine of cylinder diameter $3\frac{3}{4}$ inch with 120 needles (36 gauge) may be used for manufacturing 26x26 cm sizes socks.

4.0 WORKMANSHIP AND FINISH

The linking of the toe portion to the foot shall be elastic, smooth, and free from lumps and knots. The socks shall be free from workmanship defects i.e. texture, knitting flaws etc. The finished product (socks) should not have large mends, dropped stitches, ladders etc. The socks shall be properly pressed and folded after manufacturing. The socks when worn shall reach half way of the shine bone.

5.0 PAIRING

Socks shall be matched and paired according to their type, size and shade. A tolerance of ± 1.0 cm in the leg and foot length portions of socks shall, however, be permissible while pairing.

6.0 DRAWING AND DIMENSIONS

6.1 The drawing of socks is shown in Fig. 1.

6.2 The Dimensions of foot, leg and welt portions of the socks and mass of 10 pairs are given in Table-1.

Table-1 : Dimensions of socks

Size	Foot Length (cm)	Length of Socks (cm)	Depth of Rib Top Portion (cm)	Width of foot at centre(cm)	Welt Depth (cm)	Welt Width (cm)	Mass per 10 pairs (gm)	Type of Knit
	(A)	(B)	(C)	(D)	(E)	(F)		
Medium(24X24)	24	24	4.5	10.0	6.0	8.0	850	Terry
Large(26X26)	26	26	4.5	10.0	6.0	8.0	950	
Tolerance limit	± 1	± 1	± 0.5	± 0.5	± 0.5	± 0.5	$\pm 10\%$	

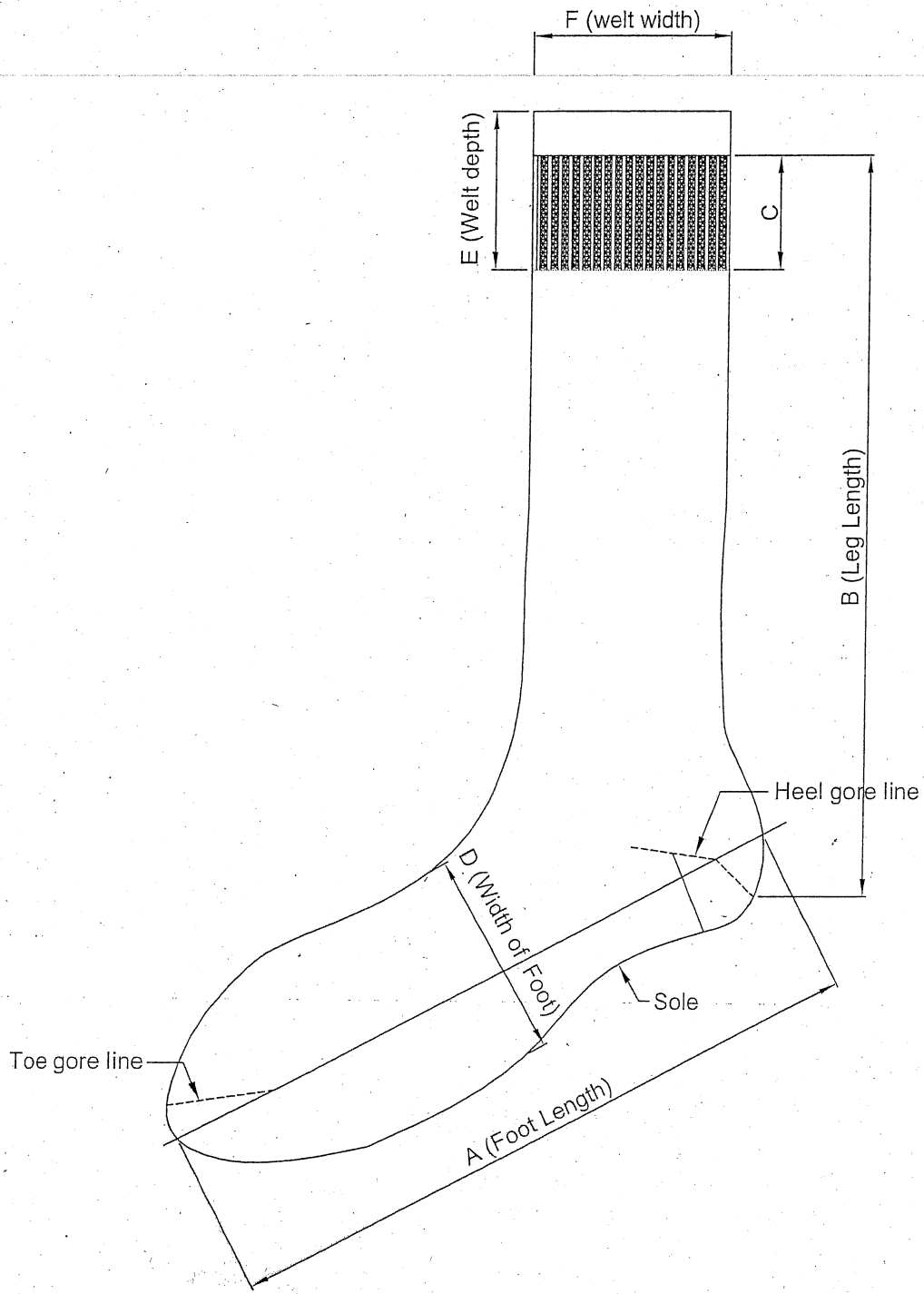


Fig-1 Socks woolen Heavy

7.0 REQUIREMENTS

7.1 The socks shall conform to the parameters tested as per the methods given in Table-2 and 3.

Table-2: Requirements of "Socks woolen heavy"

Sl. No.	Parameters	Requirements	Method of Testing
1.	Fibre composition, Percentage (Leg portion) -Wool -Nylon	75±2 25±2	IS 2006: 1988
2.	Courses/inch (Leg portion)	18±2	A-4 of IS 2187: 1982
3.	Grade of wool tops	Not less than 58s	IS 5911: 1977
4.	Dimensional Change* (due to relaxation), %, Maximum -Leg portion -Foot portion	3.0 2.5	A-5 of IS 2187: 1982
5.	Colour Fastness to 1). Light (on blue wool Standards) 2). Washing 3). Perspiration 4). Rubbing	4 or better 4 or better 4 or better 4 or better	IS 2454: 1985 IS/ISO 105 C10-B(2): 2006 IS 971: 1983 IS 766: 1988
6.	pH Value of aqueous extract	5.0 - 7.5	IS 1390:1983 (Cold method)
7.	Scouring loss, Percentage, Maximum	4.0	A-6 of IS:2360-1977

NOTE:

* A separate pair of socks shall be provided to carry out Dimensional Change test.

** 100 Gauge (For guidance) rubber thread used in the welt elastic (Top) shall be double covered with 80 denier polyester or nylon filament yarn. Qualitative test shall be performed to check the presence of polyester or nylon.

Table-3: Colour specification of "Socks woollen heavy" (AATCC Test method 173 : 2005 & AATCC Evaluation Procedure 7 : 2003)

Colour	:	Khaki		
System	:	CIE LCH		
Illuminant Observer	:	D 65		
Standard Observer	:	10 Degree		
Tristimulus Values	:	X	Y	Z
		11.687	11.564	8.824
L C H	:	L	C	H
		40.515	11.733	63.300
CMC (l:c)	:	2:1		
Colour difference, ΔE_{cmc}	:	≤ 2.0		

Interpretation of Results :

- i) If ΔE_{cmc} is less than or equal to 2.0, then sample is acceptable.
- ii) If ΔE_{cmc} is greater than 2.0, then sample is unacceptable.

Note-1 : Absorbance/reflectance/ transmittance are affected by surface characteristic features of the substrate. Therefore comparison should be made between samples of same type i.e., identical fabric construction parameters and filament/ fibre composition.

Note-2 : Test should be carried out after proper conditioning as per AATCC 173 using Diffuse (sphere) geometry spectrophotometer.

8. SAMPLING

The manufacturer should offer the stores serially numbered and arranged in such a way that the entire lot is accessible to the inspecting officer. The conforming of a lot to the requirement of this specification shall be determined on the basis of the tests carried out on the samples selected from it. The number of samples shall be selected at random in accordance with Table-4 given below as per IS 4905 : 1968.

Table-4: Pairs of Socks to be selected from a lot and permissible number of non-conforming pairs

No. of Pairs in the lot (1)	Non – Destructive Testing		Destructive Testing (Chemical Testing)	
	No. of pairs to be selected (2)	Permissible number of non-conforming pairs (3)	No. of pairs to be selected (4)	Permissible number of non-conforming pairs (5)
Upto 50	10	1	2	0
51 – 100	20	2	2	0
101-200	30	3	2	0
201 – 300	40	3	3	0
301 - 500	50	4	5	0
501 – 800	70	6	7	1
801 – 1300	110	8	10	1
1301 – 3200	150	10	15	2
3201 and above	220	14	30	3

The number of test samples and the criterion for conformity for various characteristics shall be as follows:

Characteristics	Number of test samples	Criteria for conformity
Dimensions, Nos. of courses and freedom from defects	All the pairs selected according to the column 2 of table-4	Non-conforming pairs not to exceed the corresponding number given in column 3 of table-4
Weight	All the pairs selected according to the column 2 of table-4	Each observed value satisfies the relevant requirement
Dimensional change, pH value, colour fastness to various agencies except light	All the pairs selected according to the column 2 of above table-4	Non-conforming pairs not to exceed the corresponding number given in column 5 of table-4
Colour fastness to light	One up to 500 pairs and two above that	Each observed value satisfies the specified requirement.

9. MARKING AND LABELLING

Each pair of socks should have a printed label that contains the following:

- a) Nomenclature of the store i.e. "Socks woolen heavy"
- b) Material Composition
- c) Size
- d) Name / Trademark of the manufacturer
- e) Washing Details
- f) Month & Year of manufacturing

10. PACKAGING

- 10.1 Each pair shall be ironed wrinkle free, clipped at the heel, toe and welt portions. The clipped pair shall be properly folded and placed in 30 micron (minimum) BOPP bags. The socks shall be packed in clean and dry conditions.
- 10.2 Ten pairs of socks shall be packed in polybag to form a unit pack. The quantity of the items packed and weight of the unit pack shall be stenciled with indelible ink on the unit pack.
- 10.3 Ten such unit packs shall be placed in 5 ply corrugated board box. Unit packs shall be tightly packed in the carton to avoid the movement of unit packs. The carton shall be closed with waterproof cellophane tape. The carton shall be strip bound with polypropylene tape of at least 20 mm width. The gap between the strips and the edges shall not exceed 45 cm. The box shall be lead sealed with the CRPF impression seal.
- 10.4 The socks shall be preserved with heavy dose of naphthalene at a minimum quantity of 5 kg per cubic meter of the bale or case.

11. MARKING OF THE BOX

Each box shall be legibly marked by 40-50 mm letter stenciled with indelible marking ink / paint with following details on the box :

- a) Nomenclature of the store
- b) Qty. packed in the box
- c) Supply order number with date
- d) Inspection note number and date
- e) Serial number of the box
- f) Month & year of packing
- g) Gross wt. of the box
- h) Address of consignee
- i) Complete address of the Manufacturer

13. REFERENCES:

Sl. No.	METHOD/ SPEC. No.	TITLE
(a)	IS 667: 1981, RA 2008	Methods for identification of textile fibres
(b)	IS 971: 1983, RA 2004	Method for determination of colour fastness of textile material to perspiration
(c)	IS 1390: 1983, RA 2004	Methods of testing of pH value of aqueous extract
(d)	IS 2454: 1985, RA 2006	Methods for determining of colour fastness of textile materials to artificial light (xenon lamp)
(e)	IS 2500 (Part 2): 1965, RA 2006	Sampling inspection tables
(f)	IS/ISO 105 C10 : 2006	Method for determination of colour fastness of textile material to washing (test 2)
(g)	IS 4905: 1968, RA 2006	Method of random Sampling
(h)	IS 681:1964, RA 2006	Count of yarn of cotton and rubber thread
(i)	IS 766: 1988 RA 2004	Method for determination of colour fastness of textile material to Rubbing (dry & wet)
(j)	IS 14424: 1997, RA 2007	Rubber threads – specification
(k)	IS 6359:1971, RA 2004	Method for Conditioning of Textiles

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