

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).

NORTHERN INDIA TEXTILE RESEARCH ASSOCIATION

(Linked to Ministry of Textiles, Government of India)

Annexure-I

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Directorate General CRPF
Ministry of Home Affairs, Govt. Of India
Block No-1, CGO Complex
Lodhi Road,
New Delhi-110003

NITRA/RPD/1919
27.07.11

Sub: Detailed specification/QRs of "Cap Comforter Woolen"
Sir,

Please refer your letter No U.II-1/2010-Prv (Clo) dated nil Feb 2011 regarding framing of specifications/QRs of "Cap Comforter Woolen". As per the requirement of the rate contract/tender, we have developed the specification/QRs on the basis of towel submitted by you. Following are attached:

1. Two hard copies the detailed specification
2. Soft copy (CD) of the detailed specifications.
3. One copy of bill of the development

Thanking you,

Sincerely yours

Dr. M.S.Parmar

Asst. Director & HOD R&D (P) and CQE

Encl: as above

For perusal of D/G (Prov)

BIS (Prov)
पु.उ. महा (संगरम)
Dy. Comdt. (Prov)
उप महाप्रबन्धक (संगरम)
AD (Prov / A)
सहायक महाप्रबन्धक (संगरम)
CS
कार्यालय
DA
सहायक महाप्रबन्धक (संगरम)
Date
मार्गिका को 151

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CENTRAL RESERVE POLICE FORCE STANDARD

SPECIFICATION FOR "CAP COMFORTER WOOLEN"

Submitted to :

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

Prepared by :

**NORTHERN INDIA TEXTILE RESEARCH ASSOCIATION
Sector-23, Raj Nagar, Ghaziabad (U.P.)
Email : mail@nitratextile.org Fax: 0120-2783596**

SPECIFICATION FOR "CAP COMFORTER WOOLEN"**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 "Cap Comforter Woolen". The specification describes the performance requirements and material properties – course/dm, knit structure, weight, yarn count, fibre composition, dimensions, color fastness to light, washing, and perspiration; pH, dimensional change due to washing, 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 13 pages which describe the technical specifications of "Cap Comforter Woolen" 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 "Cap Comforter Woolen" and final inspection as well.

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SPECIFICATION FOR "CAP COMFORTER WOOLEN"

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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.

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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 The specification prescribes the requirement of "Cap Comforter Woolen".

1.2 This specification does not specify the general appearance, lusture, feel, type of finish of "Cap Comforter Woolen".

2.0 MATERIAL AND MANUFACTURE

2.1 The shape, dimensions and design of the "Cap Comforter Woolen" is shown in the Fig. 1.

2.2 The "Cap Comforter Woolen" shall be manufactured using 100% woolen yarn spun on worsted system from wool tops of not less than 56s grade conforming to IS: 5911. The approximate count of yarn may be 90 Tex X 2 (Nm 11/2).

2.3 The "Cap Comforter Woolen" shall be made from knitted fabric using circular knitting machine. Plain knitted fabric structure shall be used. It shall be cut and tailored out of one piece of seamless plain knitted tubular fabric. Both layer of knitted fabric on the inside shall be given a raised finish before tailoring so as to ensure the required thickness of the four layers. The finish of the "Cap Comforter Woolen" shall match with the sample held in the custody of CRPF. The "Cap Comforter Woolen" shall be free from manufacturing defects such as broken thread in the body, large mends, ladders, dropped stitches, holes, cut, tears, etc. and any other defect, which may significantly affect the appearance or serviceability of "Cap Comforter Woolen".

2.4 "Cap Comforter Woolen" shall be cut and tailored out of two pieces of seamless plain knitted tubular fabric. The back of the two pieces shall face each other in the made-up cap so as to make it reversible.

3.0 STITCHING:

3.1 Lock stitches shall be employed to stitch the "face opening" of "Cap Comforter Woolen". 3-thread over lock stitch shall be employed to stitch various layers of the "Cap Comforter Woolen" like at bottom (2 layers) and top (4 layers). The number of stitches shall be between 44 and 48 per dm. The stitching shall be done with even tension and all loose ends shall be securely fastened off.

3.2 Sewing thread shall match with shade of "Cap Comforter Woolen". Spun polyester sewing thread 50s/3 Ne shall be used for this purpose and conform IS: 9543: 1980 RA 2004.

4.0 WORKMANSHIP AND FINISH

The "Cap Comforter Woolen" shall be free from workmanship defects i.e. texture, knitting flaws etc. The "Cap Comforter Woolen" shall not have large mends, dropped stitches, ladders sewing defects, chemical damages and dyeing defects, such as uneven dyeing and streakiness.

5.0 SEALED SAMPLE

In order to illustrate or specify the indeterminable characteristics such as general appearance, luster, feel and design of the "Cap Comforter Woolen", a sample has been agreed upon and sealed; the supply shall be conformity with the sample in such respects.

The custody of the sealed sample shall be a matter of prior agreement between the buyer and seller.

6.0 REQUIREMENTS

6.1 The “Cap Comforter Woolen” shall conform to the parameters as given in Table 2.

6.2 Specification for colour used in “Cap Comforter Woolen” shall be as given in Table 3.

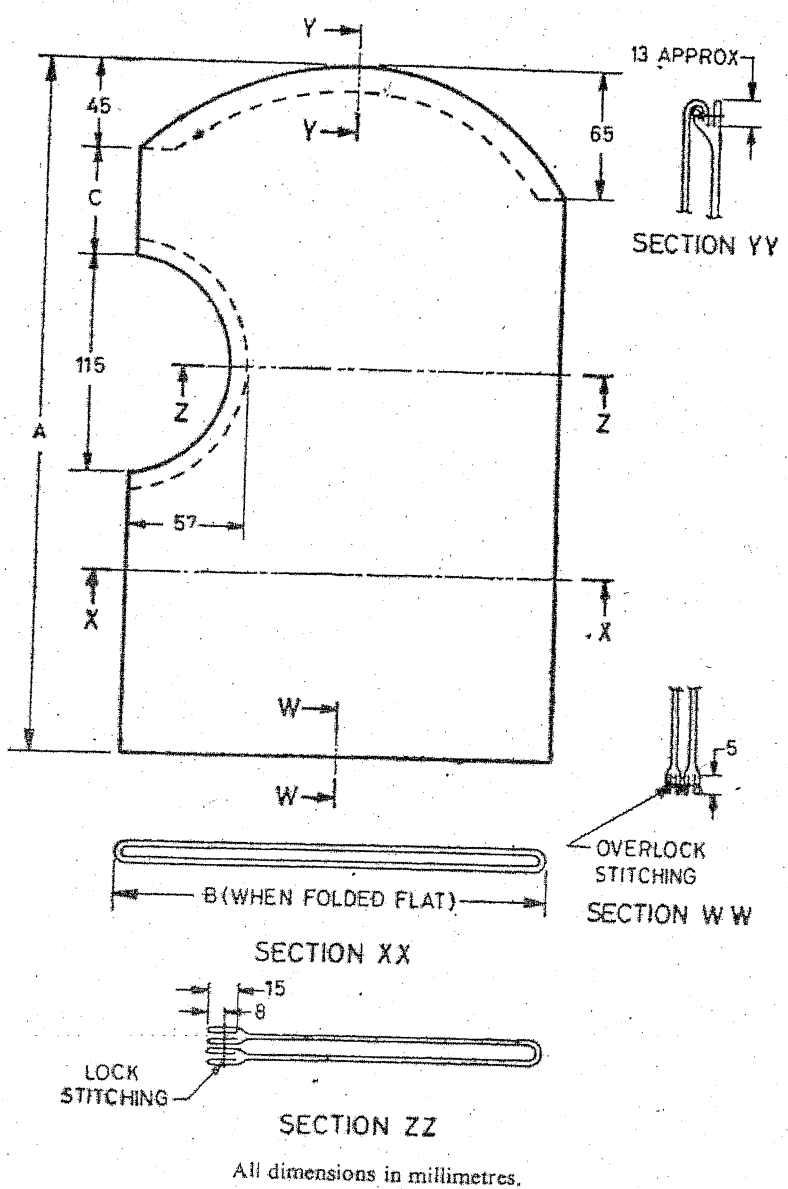


Fig. 1 Cap Comforter woolen (IS 2783: 1976)

Table-1 : Dimensions and mass of the “Cap Comforter Woolen”

Size	Dimensions (cm)			Minimum Mass of 10 caps (gram), (Test method A-3, IS:2783)
	Length A	Width, Min B	Length of Forehead C	
Small	36.0	23.0	5.5	1290
Medium	40.0	24.0	6.5	1400
Large	47.0	27.0	8.0	1720
Tolerance	± 1.0	-	± 0.5	-

NOTE: A tolerance of (-) 5% shall be permissible on the average mass of individual cap provided the minimum collective mass is maintained as specified above.

Table 2: Requirements of "Cap Comforter Woolen"

Sl. No.	Parameters	Requirements	Method of Testing
1.	Composition	100 % wool	IS 2006: 1988
2.	Courses /dm	56±4	A-4 of IS:2783-1976
3.	Thickness (4 Layer), mm, Minimum	8.0	IS: 7702 - 1975
4.	Dimensional Change (due to relaxation), percentage, Maximum -Lengthwise -Widthwise	5.0 3.0	A-5 of IS:2783-1976
5.	Colour fastness to light	4 or better	IS: 2454-1985
6.	Colour fastness to washing - Change in colour - Staining on adjacent fabric	4 or better 4 or better	IS: 3361 -1979
7.	Loss in mass, Percentage, Maximum	5.0	IS:2360-1977
8.	pH Value of aqueous extract	5.5 to 7.5	IS :1390-1983 (Cold method)
9.	Colour difference (for four layers)(ΔE)	≤ 3.0	See Table 3

Table 3: Specification of colour of "Cap Comforter Woolen"
 (AATCC Test method 173 : 2005 & AATCC Evaluation Procedure 7 : 2003)

Colour	:	Green		
System	:	CIE LCH		
Illuminant Observer	:	D 65		
Standard Observer	:	10 Degree		
Tristimulus Values	:	X	Y	Z
		4.492	4.724	3.393
LCH	:	L	C	H
		25.931	9.069	88.732
CMC (l:c)	:	2:1		
Colour difference, ΔE_{cmc}	:	≤ 3.0		

Interpretation of Results :

- i) If ΔE_{cmc} is less than or equal to 3, then sample is acceptable.
- ii) If ΔE_{cmc} is greater than 3, then sample is unacceptable.

Note-1 : Absorbance/reflectance/ transmittance are affected by surface characteristics 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.

7.0 Sampling

7.1 The sampling procedure detailed in 7.2 and 7.3 shall give desired protection to the buyer and the seller, provided that the lot submitted for inspection is homogeneous. To achieve this, the manufacturer shall maintain a system of process control at all stages of manufacturing ensuring the "Cap Comforter Woolen" tendering by him for inspection to comply with the requirements of this standard in all respects.

7.2 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

Table-4: Number of "Cap Comforter Woolen" to be selected from a lot and permissible number of non-conforming "Cap Comforter Woolen"

No. of "Cap Comforter Woolen" in the lot (1)	Non – Destructive Testing		Destructive Testing	
	No. of "Cap Comforter Woolen" to be selected (2)	Permissible number of non-conforming "Cap Comforter Woolen" (3)	No. of "Cap Comforter Woolen" to be selected (4)	Permissible number of non-conforming "Cap Comforter Woolen" (5)
Up to 300	10	1	2	0
301 – 500	20	1	3	0
501-1000	30	2	5	0
1001 – 3000	50	3	8	0
3001 and above	80	5	13	1

Note: Sampling officer will select sampling unit randomly and select ultimate items from each sampling unit as per the above table.

7.3 **Lot:** For the purpose of conformance inspection and test sampling, a lot is defined as all the completed "Cap Comforter Woolen" of the same size and type, with same assemblies, produced in one facility, using the same production processes and materials, and being offered for delivery at one time to buyer against a dispatch note.

7.4 The CRPF reserves the right to carry out inspection of bigger lot sizes, even to the extent of 100% inspection, if considered necessary.

7.5 The sample size and the criterion for conformity for various characteristics shall be as follows:

Characteristics	Sample size	Criteria for conformity
Freedom from defects, dimensions and number of courses/dm	All the "Cap Comforter Woolen" selected according to the column 2 of table 4	Non-conforming "Cap Comforter Woolen" not to exceed the corresponding number given in col. 3 of table 4
Mass, thickness	All the "Cap Comforter Woolen" selected according to the column 2 of table 4	Each observed value satisfies the specified requirement
Nature of fibre, Dimensional change, pH value, colour fastness to washing other than colour fastness to light	All the "Cap Comforter Woolen" selected according to the column 4 of table 4	Non-conforming "Cap Comforter Woolen" not to exceed the corresponding number given in col. 5 of table 4
Colour fastness to light	One in case lot size is 500 "Cap Comforter Woolen" and two if lot size is 501 and above	Each "Cap Comforter Woolen" to satisfy the specified requirement.

8.0 MARKING

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A cloth label marked with the following information shall be securely attached at the inside bottom portion of the "Cap Comforter Woolen". It should be adjacent to the place where the "Cap Comforter Woolen" is stitched with 3-thread lock stitch.

- a) Size
- b) Name / Trademark of the manufacturer
- c) Any other information required by the buyer

9.0 PACKAGING & PACKING

9.1 Ten "Cap Comforter Woolen" suitably folded shall be wrapped with one layer of polyethylene film of minimum 40 microns (see IS: 2508-1963) and tied with twine at places to form a unit pack.

9.2 Twenty such unit packs (200 "Cap Comforter Woolen") shall be packed in polyethylene or polypropylene bags and or in box, as required by the buyer (see IS 2194 and IS 2195).

10. TERMINOLOGY

For the purpose of this standard the definitions as given in IS: 3596-1967 shall apply.

11.0 REFERENCES

Sl. No.	SPEC. /TEST METHOD No.	DESCRIPTION
(a)	IS 2006 : 1988	Method for quantitative chemical analysis of binary mixture of protein fibre with certain other known-protein fibre
(b)	IS 1390: 1983,	Methods of testing of pH value of aqueous extract
(c)	IS 2454: 1985,	Methods for determining of colour fastness of textile materials to artificial light (xenon lamp)
(d)	IS 2500 (Part 2): 1965	Sampling inspection tables
(e)	IS 3361 : 1979,	Method for determination of colour fastness of textile material to washing
(f)	IS 4905: 1968,	Method of random Sampling
(g)	IS 6359:1971,	Method for Conditioning of Textiles
(h)	IS 783 : 1976	Specification for balaclava caps, wool, plain-knitted
(i)	IS 2783: 1976	Specification for Balaclava Caps, Wool, Plain-knitted
(j)	AATCC Test method 173 : 2005	CMC: Calculation of small colour differences for acceptability
(k)	AATCC Evaluation Procedure 7.: 2003	Instrumental assessment of the change in colour of a test specimen