

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.

widome 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 "TROUSER BD SERGE"

Submitted to :

**Office of the Director General of Police,
CRPF, Ministry of Home Affairs
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 TROUSER BD SERGE CLOTH

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 (CoBRA Sector), CRPF, has asked NITRA to prepare technical specifications for Trouser BD Serge. The specification describes the fabric particular and properties – ends/inch, picks/inch, weave, weight, yarn count, fibre composition, dimensions, color fastness to light, washing, perspiration, and dry cleaning; pH, dimensional change due to washing, tensile strength, etc. Bureau of Indian Standards (BIS), American Association of Textile Chemists and Colorists (AATCC) and American Society for Testing and Materials (ASTM) test methods are considered to draw this specification.

This report contains 9 pages which describe the technical specifications of Trouser BD Serge cloth for CRPF.

This technical specification will enable the CRPF to prepare tender documents (technical details) at the time of placing orders for Trouser BD Serge material and final inspection as well.

SPECIFICATION FOR TROUSER BD SERGE CLOTH**C O N T E N T S**

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0.0 FORWARD

- 0.1. This specification has been prepared by Office of the Directorate General of Police, CRPF on the authority of The Director General of Police, CRPF.
- 0.2. This specification is for use by the CRPF.
- 0.3. This specification would be used for manufacture, quality assurance and procurement of the item.
- 0.4. 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 Affairs, Block No-1, CGO Complex, Lodhi Road,
New Delhi-03

- 0.5. Copies of the specification can be obtained from:

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

- 0.6. This specification holds good only for the supply order for which it is issued.
- 0.7. The Quality Assurance Authority reserves the right to amend or modify this specification as and when required.
- 0.8. The Quality Assurance Authority is the competent authority to grant concessions, if any, in respect of any clause contained in this specification.
- 0.9. 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 "Trousers BD Serge" cloth.
- 1.2 This specification does not specify the design/ pattern and stitching of trousers from the "Trousers BD Serge" cloth.
- 1.3 This specification does not specify general appearance; feel etc of the "Trousers BD Serge" cloth.

2.0 MANUFACTURE AND FINISH

- 2.1 The "Trousers BD Serge" cloth shall have 2/2 Twill. It shall be manufactured from yarn made from uniform blend of wool (Grade of wool top: 64s, see NOTE) and polyester. For guidance the count of the yarn used in warp and weft may be 2/36 Nm and 18 Nm respectively. The selvages shall be firm and straight. The fabric shall be 'Heat set' and fully shrunk. The blend composition of the cloth shall conform to the requirements given in the Table 1.

Note: When the fibres removed from the fabric are used for determining fineness grade, the value observed may fall in the next coarse grade that is 62s.

- 2.2 If required by the CRPF, the cloth shall be rendered moth proof by suitable chemicals as per the methods specified in IS 11662.
- 2.3 The fabric should be supplied in the width minimum 155 cm. The length of each piece shall be 40 meters or as agreed between supplier and purchaser.
- 2.4 Freedom from Defect:.. The "Trousers BD Serge" cloth shall be free from major flaws (defects). The cloth when visually examined shall not have more than 12 objectionable flaw in a full length piece. However, in 25 percent of the lot, up to a maximum of 16 objectionable flaws per piece

may be permitted. A list of major flaws (defects) is given in Appendix A of IS : 4125.

- 2.5 All objectionable flaws shall be marked by means of a thread sewn in the selvedge opposite to the flaw and an allowance of 10 cm shall be given for each such flaw up to 12 flaws in the piece. However, in case of pieces having flaws exceeding 12 and up to 16, an allowance of 25 cm for each such flaw shall be given. Only one selvedge shall be used for tagging.
- 2.6 Dyeing shall be done at the 'top' stage, that is before blending and the dyeing shall be uniform. It shall free from dyeing defects such as uneven dyeing.

3.0 REQUIREMENTS

- 3.1 The "Trousers BD Serge" cloth shall conform to the requirements given in Table 1. Specification for colour of the "Trousers BD Serge" cloth shall be as given in Table 2.
- 3.2 Sealed Sample: In order to illustrate or specify the indeterminate characteristics such as general appearance, luster, feel and colour, a sample has been agreed upon and sealed; the supply shall be conformity with the sample in such respects.
- 3.3 The custody of the sealed sample shall be a matter of prior agreement between the buyer and seller.

4.0 MARKING

Each piece of cloth shall be marked with the following:

- (a) Name of the material, namely "Trousers BD Serge" Cloth material;

- (b) Composition, namely, Wool and Polyester percent to be marked on every alternate meter of the cloth at a height not exceeding 2.5 cm from the selvedge;
- (c) Length and width;
- (d) Manufacturer's name, initials or trade-mark;
- (e) Any other information required by the law in force and/or by the buyers.

5.0 PACKAGING & PACKING

The "Trouser BD Serge" cloth shall be packed in polyethylene or polypropylene bags and or in box, as required by the buyer (see IS 2194 and IS 2195).

6.0 SAMPLING AND CRITERIA FOR CONFORMITY

- 6.1 The number of pieces to be selected at random from a lot for inspection shall be according to col. 1 and 2 of Table 3. To ensure randomness of selection, procedure given in IS : 4905 shall be followed.
- 6.2 The sampling procedure detailed in 6.2 to 6.4 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 "Trouser BD Serge" cloth tendering by him for inspection to comply with the requirements of this standard in all respects.
- 6.3 Lot: The number of pieces of cloth of same composition and constructional particulars delivered to a buyer against a dispatch note shall constitute a lot.
 - 6.3.1 The conformity of a lot to the requirements of this specification shall be determined on the basis of the tests carried out on the samples selected from the lot.

6.4 The number of pieces to be tested at criterion for conformity for each of the characteristics shall be as follows:

Characteristics	No. of Samples	Criterion for conformity
i) Visual inspection for freedom from major flaws (defects)	According to col 2 of Table 3	All the pieces of cloth selected according to col 2 of Table 3 shall be visually examined. Permissible number of non-conforming pieces not to exceed corresponding number given in col 3 of Table 3.
ii) Construction, Ends, picks, mass, length and width	According to col 2 of Table 3	All specimens shall satisfy the relevant requirements as given in this specification.
iii) Blend composition, shrinkage, breaking strength, colour fastness, pH etc.	According to col 4 of Table 3	All specimens shall satisfy the relevant requirements as given in this specification.

7.0 TERMINOLOGY

For the purpose of this specification the definitions given in IS 11206 shall apply.

Table 1 : Requirements of "Trouser BD Serge" cloth

Sl. No.	Characteristics	Requirements	Test Method
1	Composition ,% - Wool - Polyester	50 ± 3 50 ± 3	IS 2006: 1988 (Dry mass basis)
2	End/dm (minimum)	210	IS 1963:1981
3	Picks/dm (minimum)	180	IS 1963:1981
4	Mass, g/m ²	230 ± 10	IS 1964 : 1970
5	Breaking strength, Newton (Minimum) - Warp-wise - Weft-wise	750 650	IS 1969:1985 (5.0 cm X 20.0 cm strip)
6	Colour fastness to washing - Change in colour - Staining on adjacent fabric	4 or better 4 or better	IS/ISO 105 C-10: 2006 - B (2)
7	Colour fastness to Dry- cleaning - Change in colour - Staining of the solvent	4 or better 4 or better	IS 4802:1988
8	Colour fastness to light	5 or better	IS 2454:1985
9	Dimensional Change due to relaxation, both directions, percentage, maximum	1.0	IS 665: 1989
10	pH value of the aqueous extract	5.0 -7.5	IS 1390:1983 (Hot method)
11	Colour difference (ΔE)	≤ 1.2	Refer Table 2

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Table-2: Specification of colour of "Trouser BD Serge" cloth
(AATCC Test method 173 : 2009 & AATCC Evaluation Procedure 7 : 2009)

Colour	:	Olive-Khaki		
System	:	CIE LCH		
Illuminant Observer	:	D 65		
Standard Observer	:	10 Degree		
Tristimulus Values	:	X	Y	Z
		6.285	6.214	3.724
L C H	:	L	C	H
		29.946	14.649	72.762
CMC (l:c)	:	2:1		
Colour difference, ΔE_{cmc}	:	≤ 1.2		

Interpretation of Results :

- i) If ΔE_{cmc} is less than or equal to 1.2, then sample is acceptable.
- ii) If ΔE_{cmc} is greater than 1.2, 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.

**Table 3 : Sample size and permissible number of non-conforming "Trouser
BD Serge" Cloth**

Lot size	Sample size	Permissible number of non-conforming pieces	Sub-sample size
(1)	(2)	(3)	(4)
Up to 50	5	0	2
51 -150	8	0	3
151-300	13	1	3
301-500	20	1	5
501 and above	32	2	5

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8.0 REFERENCES

8.1 The list of referred standards is given below:

LIST OF REFERED STANDARDS

Sl. No.	Method/Spec. number	Title
1	IS:397(Part I) : 2003	Method for statistical quality control during production : Part I Control charts for variable
2	IS:3596 : 1967	Glossary of terms relating to hosiery
3	IS:397 (Part II): 2003	Method for statically quality control during production: Part 2 Control charts for attributes and count of defects
4	IS:6359: 1971	Method for conditioning of Textiles
5	IS 2319:1987	Textile-Specification for Serge
6	IS:1963:1981	Method for determination of thread per unit length in woven fabric
7	IS:1964:1970	Methods for determination of weight per square meter and weight per linear meter of fabric
8	IS: 1954:1990	Determination of length and width of woven fabric
9	IS:1969:1985	Method for determination of breaking strength and elongation of woven fabrics
10	IS/ISO 105 C-10: 2006	Method for determination of colour fastness of textile material to washing
11	IS 2454:1985	Method for determination of colour fastness of textile material to artificial light (Xenon lamp) pressing
12	IS 1390 : 1983	Method for determination of pH value of aqueous extract of textile materials
13	IS 4802: 1988	Method for determination of colour fastness of textile material to dry-cleaning
14	IS 665: 1989	Determination of dimensional change of fabrics containing wool on soaking in water
15	AATCC Test method 173 : 2009	CMC: Calculation of small colour differences for acceptability
16	AATCC Evaluation Procedure 7 : 2009	Instrumental assessment of the change in colour of a test specimen