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 Directorate of Quality Assurance
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Reg.: Procurement specification required by CPMFs in respect of the following items.

S.No.	Item	Specification NO.
1.	Caps FS Disruptive	G / Tex Misc / CAPS F.S. Disruptive

DGS&D QA Wing has prepared the new specification of the above items. Copies of the above specification are enclosed herewith for perusal and further necessary action at your end.

(A.K. Sehgal)

Director (QA)(Tex)

Encl.: as above.

I.D Note No.DGS&D (QA)/TEX/Dev.Cell/Capes FS Disruptive dtd.23/12/03

Copy to:

1. Shri Harminder Raj Singh, IAS, Joint Secy. (P.M.), Min. of Home Affairs, North Block, New Delhi – for information please.
2. Shri R.K.Shukla, I.G. (Prov), CISF
3. Shri B.D. Sharma, I.G. (Prov), BSF
4. Shri R.S. Notiyal, I.G. (Prov), CRPF
5. Shri M.C.Bhatt, DIG (Prov.), ITBP
6. Shri K.K.Ghosh, DDG (Procurement), Min. of Home Affairs.
7. Shri P.C.Rastogi Dir. (Finance), MHA, North Block, New Delhi
8. Shri Yog Kapoor, DIG, ITBP
9. Shri V.P.Jayarajan, ADIG, BSF
10. Shri K.K.Singh, AIG (Prov) CISF
11. Shri Nand Kishore (Sr. A.O.) CISF
12. Shri Devinder Jit Singh, DC, CRPF
13. Shri Chandra Mauli, D.C.ITBP
14. DDG(QA)/WZ
15. DDG(QA) /SZ
16. DDG(QA)/EZ
17. DDG(QA)/NZ
18. D(QA), Kanpur
19. D(QA), Mohali
20. DD(QA), Ludhiana
21. DQA (P&P) – **He is also requested to notify the new specification in the monthly bulletin and posted in web site.**

All the suppliers in your region to be informed about the specification, six months before tender opening date.

Specification
File
3/1/04

Handwritten signatures and initials at the bottom of the page.

**GOVERNMENT OF INDIA
DIRECTOR GENERAL OF SUPPLIES AND DISPOSALS
SPECIFICATION FOR
CAPS F.S. DISRUPTIVE**

SPECN. NO. G/TEX/MISC/CAPS F.S DISRUPTIVE

Date of issue-23-12-03

1. FOREWORD -

This specification is prepared on the basis of experience gained by the department during recent past and also to meet rising expectations of the consumers. Assistance has been taken from the following specifications :-

- I) IS : 11248
- II) IS : 9543
- III) IND/TC/0043
- IV) IND/TC/0042
- V) IND/TC/1505

2. SCOPE

The Specification caters to the needs of various Central para-military forces and State Police Organisations etc. This standard covers the constructional manufacturing and other requirements of Caps F.S. Disruptive, made from polyester blended fabric W.R.

3. MATERIAL

I) Polyester/Cotton Blended Fabric disruptive pattern Water Repellent

Polyester/Cotton Blended Fabric disruptive pattern water repellent to specification as per Annexure I, shall be used for fabricating the Caps F.S disruptive.

II) Sewing Thread

Spun Polyester Sewing Thread of count 125 dtex x 3 to Specn. No. IS : 9543 1980, Vr. No. 4 shall be used for stitching of Caps F.S disruptive.

III) L.D.P.E SHEET

L.D.P.E. Sheet to specification as per Annexure II shall be used as stiffener in the fabrication of Caps F.S, disruptive.

IV) Velcro

Velcro to IS : 8156 - 1994 shall be used in the fabrication of Caps F.S. disruptive.

V) Polyurethane Foam

Polyurethane Foam to specification as per Annexure III shall be used as cushioning material for fabricating the Caps F.S disruptive.

Contd....2.....

4. MANUFACTURE

- i). The Caps F.S disruptive shall be manufactured from materials specified in this specification and assembled through - out with lock stitch. The number of stitches shall be 35/40 per dm. The pattern, dimension etc shall be according to the relevant drawing and also as per table at Annexure -IV. All loose ends shall be securely fastened off.
- (ii) Caps shall be made of four components viz top, upper Circumferential band, lower Circumferential girdle and peak. These components shall have two layers of the fabric (i.e outer layer and inner layer). The disruptive pattern shall be visible on the outer side of the outer and inner layer of the cloth.
- iii). **Top of the Cap**
The top of the cap consisting of two layer of cloth shall be made in single piece as per the size, pattern and relevant drawing.
- iv. **Upper Circumferential Band**
The upper Circumferential band shall consist of two layers of cloth in two pieces as per the size and pattern to the relevant drawing. These two pieces shall be joined together at two places i.e at the centre of the front forehead and at the back of the cap. The top shall be stitched to upper Circumferential band as shown in the drawing. The width of the band is reducing from back to front forehead , therefore care to be taken while making its shape as per the pattern, dimension and drawing.
- v. **Lower Circumferential Girdle**
Lower Circumferential girdle, 2.5 cm wide, shall consist of two layers of the cloth and in between these layers casing, the strip of L.D.P.E Sheet (2.4 cm wide, 0.5mm thick) as stiffener and cushioning material of polyurethane foam (2 mm thick) to be enclosed. The P.U foam shall be on the inner side of the cap girdle. Further a strip of 2.5 cm wide of one layer of same cloth shall be stitched at the lower edge on the inner side of the girdle with raw edges duly turned -in. This girdle band shall be provided through out the periphery of the cap. As shown in the pattern/drawing and accordingly stitched to upper Circumferential band on the lower side.
- vi. **Peak of the Cap**
The peak of the cap shall consist of a piece of L.D.P.E. Sheet (1.7 mm thick) encased in two layers of the cloth material as per the pattern / drawing. The peak shall be quilted at the periphery with four rows of machine stitches equidistant from each other as depicted in the drawing. Care shall be exercised that the stitching are even and evenly spaced through out the peripheral edge of the peak. The peak shall be further reinforced with binding strip of the same cloth. The finished width of binding on the edge of the peak shall be 0.75 cm on either side after stitching and turn-in. The peak shall be stitched to the main body of the cap in a single row of machine stitching as shown in the drawing. Care shall be exercised that the projection of the peak is horizontal and there is no crookedness or unevenness in the peak.
- vii. **Velcro strip**
Velcro strip at cut to be provided at the back of the cap as per drawing /dimensional parameters at Annexure -IV.

5. REQUIREMENTS

- a) The polyester/ cotton blended fabric disruptive pattern water repellent shall confirm to the requirements shown at Annexure – I.
- b) Dimensions of the caps shall conform to the requirements as shown at Annexure IV.

6. SEALED SAMPLE

The general appearance, feel, finish, workmanship, shape, design and pattern of the Caps F.S disruptive shall be as per sample agreed upon the buyer and seller.

7. MARKING ON CAPS F.S DISRUPTIVE LABEL

A suitable white satin cloth label of size 4 Cm. X 2 Cm. shall be machine stitched with polyester thread of matching colour at lower girdle on the back side of the cap, duly printed with the following particulars :

- I) Nomenclature of the Stores.
- II) Size
- III) Manufacturer's name, initial or trademark
- IV) Year of Manufacture.

8. FREEDOM FROM DEFECTS:

The Caps F.S disruptive when visually examined shall not have any objectionable flaw. The objectionable flaws shall be those which strike immediately the eyes of the person examining the Caps F.S disruptive and shall be deemed to include the following :

- I) Creases and wrinkles
- II) Uneven shade/print.
- III) Missing ends / picks
- IV) Floats
- V) Big slubs knots and specks
- VI) Stitching defects etc.
- VII) Oil and other stains which are liable to effect the serviceability of the caps.

9. SAMPLING AND CRITERIA FOR CONFORMITY

- i. The firms shall offer the Caps F.S disruptive dully pre-inspected and stacked in such a manner that it is easily accessible for sampling purposes.
- II) The maximum lots size shall be 20,000 numbers.
- III) Sampling shall be done as per IS : 4905

- IV) The sampling officer shall first draw the samples for visual, dimensional, and construction parameters and for compliance to approved/sealed sample as per columns 2 & 3 of the following Table and inspection report will be prepared by him accordingly.
- V) If found satisfactory on examination as above, the officer shall further draw the samples for lab testing as per columns 2 & 4 of the following Table.
- VI) If all the lab test results also are satisfactory, lot shall be accepted after bulk inspection. Bulk inspection shall be carried out on hundred percent basis for visual parameters such as feel, finish, workmanship and freedom from defects etc and for compliance to approved/sealed sample. Inspection report shall be prepared for the parameters specified and for at least the same number of samples as given in column 3 of the following table.
- VII) Non- confirming lots shall be rejected straightway.

SAMPLING PLAN

SL.NO.	LOTS SIZE IN NOS.	VISUAL DIMENSIONAL AND CONSTRUCTIONAL PARAMETERS	LAB TESTING FOR PHYSICAL AND CHEMICAL PARAMETERS
(1)	(2)	(3)	(4)
1.	Up to 3000	50	3
2.	3001 to 10000	90	7
3.	10001 to 20000	150	11

11. PACKAGING

- I) The Caps F.S disruptive. shall be individually packed in unit packages with self-sealing polybags.
- II) 10 unit packages of Caps F.S disruptive shall be placed one over the other and then suitably tied with jute twine 3 ply or polypropylene twine.
- III) 20 such bundle so formed shall be wrapped with a layer of polythene film and placed in rectangular cardboard of suitable size. The Carton, thereafter will be sealed with adhesive tapes and tape bound with polypropylene tapes. The rolls of adhesive tapes are to bear the manufacture's identification marking duly printed on its entire length. The Carton shall further bear its gross weight as well as other suitable identification markings neatly printed/ stenciled on it. Thereafter, the Carton shall be covered with an outer layer of laminated cloth Hessian stitched all around with double twine 3 ply jute or polypropylene with not less than 6 stitches per 10 cm taking care not to pierce the card board carton itself. Various identification markings will thereafter be again stenciled on the exposed surface of the Hessian cloth. The bulk package, thus formed will be suitable tape bound with minimum two each longitudinal and transverse polypropylene straps. The seams on the Hessian cloth shall be tamperproof and marked with indelible ink/paint.

- V. The material used for packing of caps FS. shall confirm to the following particulars :-

SL. MATERIALS

1. Jute, twine 3 ply or polypropylene twine
2. Laminated cloth Hessian
3. Polypropylene strapping, 12 mm wide x 0.5 mm thick (or) Hot-rolled steel strips (bailing), 13mm wide x 0.4mm thick
4. Polythene film, 0.04mm thick
5. Cardboard Cartons.
6. Self-sealing poly-bags
7. Printed Adhesive Tape

CONFORMING TO

IS : 1912 / IS : 12734
Prov Specn. No. IND/TC/21234
IS : 1029 (medium grade)

IS : 2508
Best Commercial Quality
Best Commercial Quality
Best Commercial Quality

VI Each bulk package shall be legibly / indelibly marked by stencil before despatch, with the following particulars :

1. Manufacture's name, initials or trademark.
2. Nomenclature of Stores
3. Quantity packed in the package
4. Gross mass of package in 'Kg'
5. Year of packing
6. Inspection Note number and date.
7. Contract number and date.
8. Name and address of the consignee.

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05.12.2003

Development Cell,
Delhi Directorate of Quality Assurance
DGS&D, New Delhi

ANNEXURE - I

To

Specification no. G/TEX/MISC/CAPS F.S DISRUPTIVE

Polyester / Cotton Blended Fabric Disruptive Pattern Water repellent

1. Material

Cloth plain weave Polyester and Cotton Khaki shall conform to requirements as laid down in various clauses of the specification no IS : 11248 - 1995. Vat and disperse dyes shall be used for dyeing of the fabric.

2. Processing

- i) The cloth plain weave Polyester and Cotton Khaki shall be printed in various colours as per the disruptive pattern. The disruptive pattern shall be obtained by repeats of the design by using fast dyes. The khaki dye fabric shall be printed/ over printed in such a way to obtain complete pattern depicted by the sealed sample.
- ii) The printed fabric shall be given water repellency treatment. The treatment shall not affect the various shades of the printed fabric. The add on shall not exceed more than 2% on the mass of the fabric.

3. Requirements

Requirements of the finished printed fabric shall be as per table 1 of IS : 11248 – 1995. In addition requirement of water repellency shall be as under :-

Parameter	Requirement	Method of Test
Water repellency	Spray rating 80 or above	IS : 390

ANNEXURE - II
To
Specification no. G/TEX/MISC/CAPS F.S DISRUPTIVE
LOW DENSITY POLYURETHANE SHEET

REQUIREMENTS

L.D.P.E. sheet shall conform to following parameters

- | | | |
|------|-----------------------------------|---|
| i) | Mass (k.g./M) | 1.6 ± 0.1 |
| ii) | Density apparent (g/ml) | 0.95 |
| iii) | Tensile strength (N/cm) | 830 Minimum |
| iv) | Elongation at break (%) | 125 Minimum |
| v) | Thickness -(under 200 gm/cm) mm | 1.7 ± 0.1 (For Peak of Cap FS)
0.5 ± 0.1 (For lower circumferential Girdle) |

ANNEXURE - III
To
Specification no. G/TEX/MISC/CAPS F.S DISRUPTIVE
FLEXIBLE POLYURETHANE FOAM SHEET

REQUIREMENTS

The P.U. foam sheet shall conform to following parameters :-

- | | | |
|------|----------------------------|--------------|
| i) | Thickness (mm) | 2 ± 0.2 |
| ii) | Density Apparent (kg./m) | 27 ± 2 |
| iii) | Tensile Strength (N/cm) | 9.8 Minimum |
| iv) | Elongation (%) | 300 ± 30 |
| v) | Compression set (%) | 20 Maximum |

ANNEXURE - IV TO SPECIFICATION NO. G.TEX/MISC/CAPS FS DISRUPTIVE
CAPS FS DISRUPTIVE
MAJOR DIMENSIONAL PARAMETERS

SIZE	INTERNAL CIRCUMFERENCE OF THE CAP AT LOWER GIRDLE	CIRCUMFERENCE AT THE TOP OF THE CAP	CIRCUMFERENCE OF PEAK (OUTER)	CIRCUMFERENCE OF THE PEAK (INNER)	WIDTH OF UPPER CIRCUMFERENTIAL BAND AT THE FRONT FOREHEAD	WIDTH OF UPPER CIRCUMFERENTIAL BAND AT THE BACK (FROM UPPER EDGE OF VELCRO BUT INCLUDING THE CUT AT THE BACK)	CIRCUMFERENCE OF CUT AT THE BACK OF CAP
107/ SMALL	56	54	36	20	3.5	6.5	12
96/ MEDIUM	60	58	37	22	4.0	7.0	14
110/ LARGE	64	62	38	24	4.5	7.5	16
TOLERANCES	± 0.5	± 0.5	± 0.5	± 0.5	± 0.2	± 0.2	± 0.2

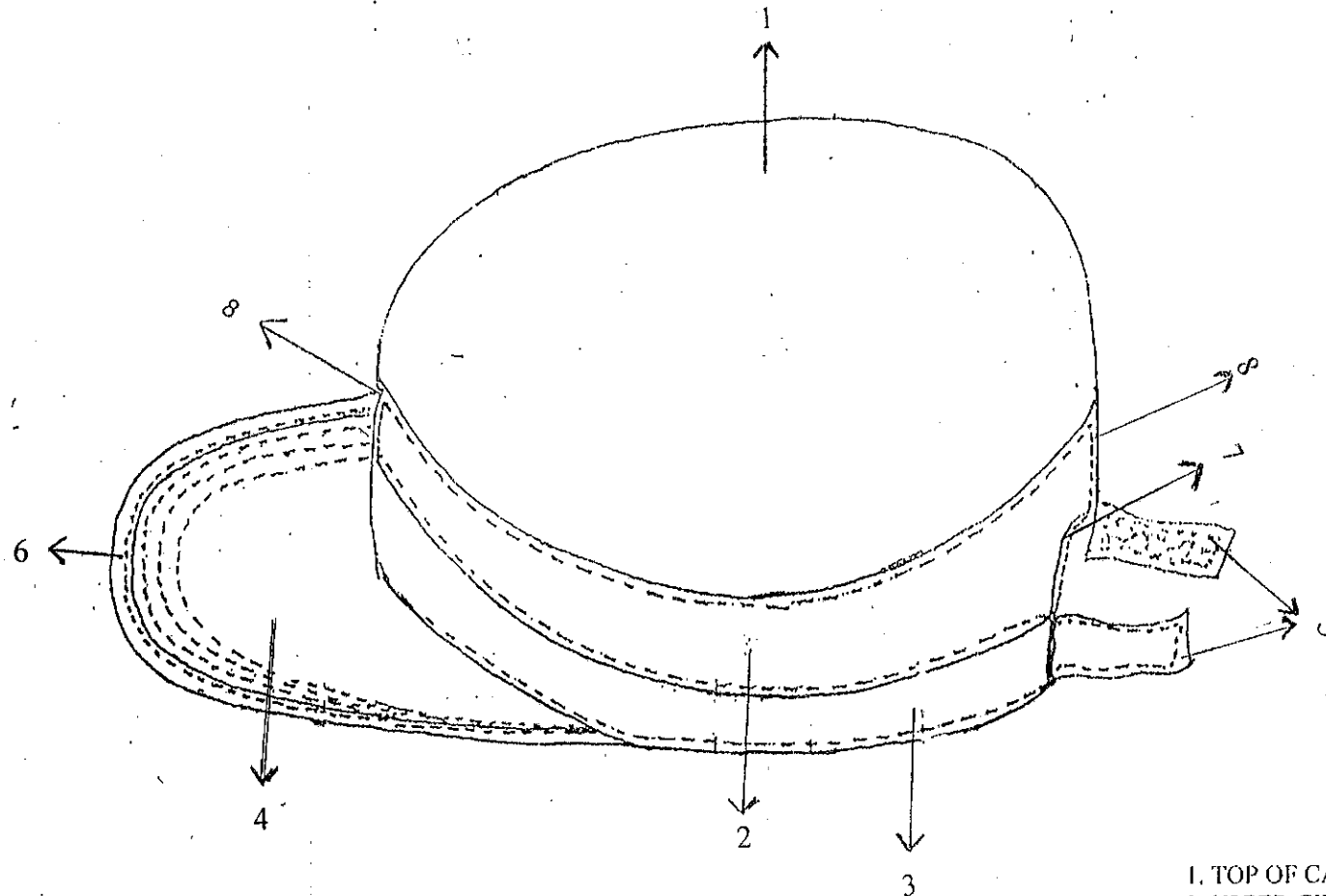
Note:- i) Length and width of Velcro strip shall be 7 cm. and 2.5 cm. respectively. Velcro strip to be covered and stitched using the same cloth as of main body of the caps.

- ii) Width of lower circumferential girdle shall be 2.5 cms..
- iii) No joint at the upper circumferential band (other than one at the centre of front forehead and second at the center of the back) shall be permitted.

(14)

Drawing
To
DGS&D Specn. No. G/Tex/Misc./Caps F.S. Disruptive

CAP F.S. DISRUPTIVE



1. TOP OF CAP
2. UPPER CIRCUMFERENTIAL BAND
3. LOWER CIRCUMFERENTIAL GIRDLE
(INSIDE LDPE SHEET & PU FOAM SHEET)
4. PEAK (INSIDE LDPE SHEET)
5. VELCRO STRIP
6. BINDING AT THE EDGE (THROUGHOUT)
7. CUT AT THE BACK
8. JOINT AT THE FRONT & BACK