Working copy

RESTRICTED

Prov. Specification No. S/5094/TC-1(b)/Cap Bal OG (Imp)

Drawing Sheet Attached: One

GOVERNMENT OF INDIA
MINISTRY OF DEFENCE
DGQA ORGANISATION

SPECIFICATION

FOR

CAP BALACLAVA OG (IMPROVED)
DS CAT No. : NIV

ISSUED BY

CONTROLLER
CONTROLLERATE OF QUALITY ASSURANCE
(TEXTILES & CLOTHING)
DEPTT. OF DEFENCE PRODUCTION
MINISTRY OF DEFENCE
ASHOK PATH,
KANPUR - 208 004

PRICE: Rs.

YEAR : 2016

RESTRICTED

Ecc Cat 7
3

INDEX

SL. No.	CONTENTS	PAGE No.
0.	FOREWORD	1
1.	SCOPE	2
2.	RELATED SPECIFICATIONS/REFERENCES	2
3.	TERMINOLOGY, DEFINITIONS AND SYMBOLS	3
4.	STANDARD PATTERN	4
5.	COMPONENT & MATERIAL	4
6.	MANUFACTURE /PROCESSING	4
7.	DIMENSIONS & TOLERANCE	5
8.	WORKMANSHIP AND FINISH	6
9.	PRE-INSPECTION BY PRODUCER & ADVANCE SAMPLE	6
10.	QUALITY ASSURANCE	6
11.	MARKING	7
12.	SAMPLING PROCEDURE	7
13.	CRITERIA FOR CONFORMITY	7
14.	TEST METHOD	8
15.	PRESERVATION, PACKAGING AND MARKING	8
16.	WARRANTY	8
17.	DRAWING	8
18.	DEFENCE STORES CATALOGUE NO	9
19.	SUGGESTION FOR IMPROVEMENT	9

RECORD OF AMENDMENTS

AMENDMENT No.	DATE	DETAILS OF AMENDMENTS	AMENDMENT CARRIED OUT BY & DATE

0.0 FOREWORD

0.1 This specification contains 13 No. of pages, has been prepared by Controllerate of Quality Assurance (Textiles & Clothing), Ashok Path, Kanpur on the advice of MGO /EM(G&C) Branch, New Delhi vide their letter No. B/82222/1/PP (cap) MGO/EM(GS&C) dated 25 May 2015 based on trial evaluated and duly recommended sample along with trial report and technical literature provided to Controllerate of Quality Assurance (Textiles & Clothing), Ashok Path, Kanpur

0.2 This specification shall be used for Tender Enquiry, Procurement, Manufacture and Quality Assurance of Cap Balaclava OG (Improved) and the store shall conform in all respects to this specification and other particulars if any issued with it.

0.3 The Quality Assurance Authority for the store covered by this specification is the Controller, Controllerate of Quality Assurance (Textiles & Clothing), Ashok Path, Kanpur. Enquiries regarding this specification related to technical or any other contractual conditions shall be referred to the Quality Assurance Authority Controller, Controllerate of Quality Assurance (Textiles & Clothing), Ashok Path, Kanpur

0.4 This specification is liable to amendment at any time and therefore, is applicable only to specific enquiry made at any time. For any subsequent enquiry, a fresh copy of the specification is to be obtained.

0.5 Any deviation from this specification will be resorted to with the express written sanction of the Controller, Controllerate of Quality Assurance (Textiles & Clothing), Ashok Path, Kanpur.

0.6 This is a restricted document and therefore ,should not be communicated to any one who is not authorized to receive information pertaining to this document. Copies of any other reference /document such as specification /drawing/instructions/guides can be obtained on payment from Controller, Controllerate of Quality Assurance (Textiles & Clothing),AshokPath,Kanpur

1.0 SCOPE

1.1 This specification covers the requirement of Cap Balaclava OG (Improved) in three sizes small, medium and large. The Cap Balaclava is intended to be used by Army personal as a headgear for protection against cold climate to the extent of -10 °C in high altitude.

2.0 RELATED SPECIFICATIONS/REFERENCES

2.1. Reference is made in this specification to: -

Sl No	SPECIFICATION	PARTICULARS
(a)	As per Appendix 'C' of this specification.	Polyester Fleece Fabric Knitted OG
(b)	JSS:8405-25:2010 Rev. No.2	Cap FS Disruptive with Indian Army Logo (LDPE Sheet for Peak Interlining)
(c)	IS:8156-1994 (Second Revision Reaffirmed -2009	Set of Fasteners for consumer goods Synthetic Hook & Loop Tape
(d)	IND/TC/0296(b)	Sewing Thread Spun Polyester Dyed OG 125 d/tex x3
(e)	IS:4905-2015/ISO 24153:2009	Method of Random Sampling & Randomizations Procedures (First Revision)
(f)	Prov Schedule No. IND/TC/PMS/2008 Amdt.No.3	Packing and Marking Schedule for Personal Clothing Items (Part-I)
(g)	IS:/ISO105-C 10:2006	Method for determination of Colour Fastness of Textiles Materials to Washing -Test B(2)

Record of Amendment To Provisional Specification Number S/5094/Tc-1(B)/Cap Bal OG(Imp)

AMENDMENT No. 2

Clause 2.1(f) & 16.1

For : IND/TC/PMS/2008 Rev. No. 1

Amendment No. 1 & 2

Read :

(a) Each garment i.e. Cap Balaclava OG (Improved) shall be packed in a self adhesive polythene bag of 0.04 mm of thickness (as per IS : 2508).

(b) 05 Nos. of garments shall be tied with Jute Twine to form a unit bundle.

(c) 04 Nos. of such unit bundles will be packed in a 5- ply inner box of dimensions (L x B x H) 420 x 330 x 375 mm, as per specification no. IS: 2771.

(d) Two such inner boxes will be packed in an outer box of dimensions (LxBxH) 700 x 450 x 400 mm, as per specification No. CQA(GS)/US/460.

(e) Then the outer box will be covered by HDPE Bag Size- 750 x 500 x 1000 mm as per IS : 11652.

(f) Outer box shall be bound with two bands of PP strapping of 0.5 mm thickness and 12 mm wide conforming to JSS : 8135-10 (latest) across length and width. The ends shall be sealed with heat sealing/punching machine.

(g) Bilingual Self Adhesive Marking Label of size 30 X 20 CM as per Appendix 'A' of PMS No. IND/TC/PMS/2008 will be pasted on the outer box.

(j)	IS:1390-1983 First Rev. Reaffirmed - 2009	Method for determination of pH value of aqueous extract of textile materials.
(k)	IS:667 -1981 Reaffirmed - 2013	Method for Identification of Textiles Fibers(Dry mass basis).
(l)	IS:1966 –1976 First Rev.	Method for determination of Bursting Strength and bursting distention of fabric-Diaphragm method.
(m)	IS:1964-2001 Second Rev. Reaffirmed -2010	Method for determination of Mass per unit length & mass per unit area of fabrics.
(n)	IS:2977:1989 First Rev. Reaffirmed 2010	Method for determination of Relaxation Shrinkage

Note : At the time of placement of contract. current year of specification/test method to be followed .

2.2 Indian Standard(IS) Specifications are issued by the Bureau of Indian Standard and can be obtained on payment from Sales Section, Bureau of Indian Standard, Manak Bhawan, 9-Bahadur Shah Zafar Marg, New Delhi or their regional offices. The website is http://www.bis.org.in.

2.3 ISO test method can be obtained online on payment from their respective websites.

3.0 TERMINOLOGY, DEFINITIONS & SYMBOLS

3.1 For the purpose of this standard the definitions and terminology given in the relevant Indian Standards should apply.

4.0 STANDARD PATTERN

4.1 Standard Pattern of Cap Balaclava OG (Improved) held by the Controller, Controllerate of Quality Assurance (Textiles & Clothing), Ashok Path, Kanpur shall constitute the standards as regards shade, shape, workmanship, finish and any other particulars or properties not noted /defined in this specification.

5.0 COMPONENTS AND MATERIALS

5.1 The Cap Balaclava OG (Improved) shall be manufactured from the materials as per details given below.

Sl. No	PARTICULARS	SPECIFICATION NO.
(a)	Polyester Fleece Fabric Knitted OG	As per Appendix 'C' of this Specn.
(b)	LDPE Sheet for Peak Interlining	Appendix 'B' to JSS: 8405-25:2015 Second Revision
(c)	Set of Fasteners Hook & Loop Tape Synthetic 25 mm O G Type-1 .	IS: 8156-1994 Second Revision Reaffirmed- 2009
(d)	Sewing Thread Spun Polyester OG 125 D Tex/3	IND/TC/0296(b)

6.0 MANUFACTURE/PROCESSING

6.1 The Cap Balaclava O G (Improved) shall be made to the shape and design illustrated in the drawing attached to the specification.

6.2 The cap shall be manufactured in combination of three parts viz. Crown, Neck Flaps and Peak as described in the following sub clauses:

6.2.1 **Crown**: It consists of four identical panels. The design of each panel is illustrated in the drawing attached to the specification. Two single Layer Fleece are stitched together to form one panel in such a way that the raised portion of the fleece are kept outside on both the sides.

6.2.2 **Neck Flap**: The neck flap consists of two similar parts which are stitched together to form a single piece. Two single layer Fleece are joined by machine stitching in accordance with the sealed sample.

6.2.3 **Peak**: A forehead piece in the shape of a segment of circle of required dimensions shall be made from two single layer Fleece. These two layers are stitched together as per the sealed sample and a LDPE sheet of appropriate size is kept in between for reinforcement.

6.2.4 **Assembly:** All the four panels of crown, neck flap and peak shall be joined together with appropriate seams as shown in the drawing plate as Appendix 'C'

6.3 **Velcro**: Male portion of Velcro, two in numbers shall be fixed at left neck flap. First male portion is placed 5 mm above of bottom line of the neck flap on outer surface. Two tapes are 143 mm apart and are placed as per the sealed sample. Similarly, female portions of the two Velcro are placed at right neck flap on inner surface in accordance with the sealed sample.

6.4 **General Stitching**: All the four panels are joined together to form the crown of Cap Balaclava OG (Improved) by Lock Stitches. Two neck flaps are also joined by Lock Stitches. The peak and the neck flaps are then joined with the crown by interlock stitches.

7.0 DIMENSIONS AND TOLERANCE

7.1 The Cap Balaclava OG (Improved) shall conform to the dimensions and tolerances given in the Appendix 'B' to this specification. The cap shall conform to the shape, design and dimensions as also given in the drawing of the specification as Appendix 'D'.

8.0 **WORKMANSHIP AND FINISH**

8.1 In appearance shade, general workmanship & finish and in all other respect not noted/defined in the specification, the Cap Balaclava OG (Improved)shall conform to the sealed pattern held in the custody of the Controllerate of Quality Assurance (Textiles & Clothing), Ashok Path, Kanpur.

9.0 **PRE-INSPECTION BY PRODUCER:** Manufacturers/Contractors must satisfy themselves first by carrying out through pre-inspection of each lot /batch that the store manufactured are in accordance with the contract and fully conform to the specification, before tendering to QA Officer nominated under the terms of contract. A declaration by the contractor that necessary pre-inspection/tests have been carried out on the stores tendered and the same are fit for inspection and test certificate shall be rendered along with challan. The declaration shall include the method followed in pre-inspection showing features checked/tested and the test reports be submitted along with challan. If the QA officer finds that the pre-inspection of the consignment as required has not been carried out, the consignment is liable for rejection.

10.0 **ADVANCE SAMPLE**: The Firm who have not supplied the store during last three years have to submit 05 Nos. of advance samples along with 03 meter of basic cloth prior to commencement of Bulk production. The Advance samples must be submitted to AHSP within 25 days from issuing date of A/T /SO and AHSP to submit the report to PO within 60 days from the date of receipt of samples.

11.0 **QUALITY ASSURANCE**:

11.1 Samples taken from any portion of the consignment or during surveillance inspection, shall on examination, conform to the requirements stipulated in this specification.

11.2 While offering store for QA, the vendor shall submit test certificates of materials (showing physical & chemical properties) from the own laboratory of the vendor or from recognized laboratories , if the manufacturer does not have his own testing laboratory along with the test method followed.

11.3 **Freedom from Defects**: The Cap Balaclava OG (Improved) shall be reasonably free from any spinning, knitting, Dyeing, finishing and garmenting defects.

12.0 **MARKING**:

12.1 Each Cap Balaclava OG (Improved) shall be stitched with a white cloth taffeta synthetic label of size 6.0 x 6.0 cm folded in the middle and securely stitched at the back centre of the crown and neck flap joining seam. The label shall be printed with manufacturer's name, initials or recognized trade mark, nomenclature and size of store, year of manufacture shall be legibly printed.

13.0 **SAMPLING PROCEDURE**

13.1 The lots to be offered by the vendors for Quality Assurance shall constitute not more than 32,000 Nos. The supplier shall offer the store serially numbered and arranged in such a manner that the entire lot is easily accessible to the Sampling Officer.

13.2 Based on the lot size offered for Quality Assurance ,sample for visual examination and dimensional check at the time of sampling is to be drawn as per column(4) of the Appendix 'A' using technique of random sampling as per IS:4905:2015/ISO 24153:2009.

13.3 On having satisfied with the preliminary examination, samples if required for laboratory test/ examination shall be drawn as per column (5) of the Appendix 'A'.

14.0 **CRITERIA FOR CONFORMITY**:

14.1 The lot shall be considered to be in conformity with the required standard if the samples drawn for lab test are found satisfactory and the lot is also found otherwise satisfactory in regards to visual parameters.

14.2 The rejected stores shall be marked in such a way that the same can't be re-offered/mixed with accepted stores.

15.0 **TEST METHODS**:

15.1 Test methods mentioned against each requirements of this specification are to be followed.

15.2 Store shall be attached with size label 6.0 x 6.0 cm folded and machine stitched at the back centre of the crown and neck flap joining seam, showing nomenclature of the store Cat Part No. manufacturer's name & address, year of manufacture.

16.0 **PRESERVATION, PACKAGING & MARKING**:

16.1 As per Controllerate of Quality Assurance (Textiles & Clothing), Ashok Path, Kanpur PMS No. IND /TC /PMS/2008 Amdt No. 3

17.0 **WARRANTY**

17.1 All stores to be supplied should be free from all defects and faults in material workmanship and manufacture. The store should be of the highest grade and consistent with established and generally accepted standards for material of the type used and in full conformity with the specifications, drawings or samples and shall, if operable, operate properly. The seller shall be bound to furnish a clear written warranty regarding the same. In the event of the ultimate consignee in India not finding the stores in accordance with the order, the seller will be required to replace them free of cost inclusive of all freight and handling charges. Such replacements will be done within 90 days of the claim report raised by the purchaser. The standard conditions will also apply in respect of replaced stores. This warranty shall remain valid for 18 months after delivery or 12 months after their arrival at the ultimate destination in India, whichever is earlier, or as specified in the contract.

18.0 **DRAWING**

19.1 One drawing plate is attached with this specification as Appendix 'D'.

20.0 DEFENCE STORE CATALOGUE NO.

20.1 The store covered by this specification shall bear the following DS Cat No.
NIV - Cap Balaclava OG (Improved)

21.0 SUGGESTIONS FOR IMPROVEMENT

21.1 This specification is a live document and subject to change / updating. Any suggestions for improvement of this document may be sent to:-

CONTROLLER
CONTROLLERATE OF QUALITY ASSURANCE
(TEXTILES & CLOTHING)
ASHOK PATH,
KANPUR - 208 004
E-mail cqatc-dgqa @nic .in

Dated: 25 Feb'2016
Place: Kanpur (UP)

CONTROLLER
CONTROLLERATE OF QUALITY ASSURANCE
(TEXTILES & CLOTHING)
KANPUR - 208 004

Prov. Specification No. S/5094/TC-1(b)/Cap Bal OG (Imp.)

Appendix 'A'

SAMPLING PLAN

BASED ON 4% AQL

ISO : 2859-1-1999

Lots Size in Bundles each containing 10 Nos of Cap Balaclava OG	SAMPLING PLAN FOR						
	Visual Parameters/dimensional check at the time of sampling		Sample size for detail check at Bulk QA stage	Physical Parameters (for laboratory tests)		Chemical Parameters and other physical parameters Requiring long testing time (for laboratory tests).	
	Gen. Insp. Level-II			Spl. Insp Level S-3		Spl.Insp.l Level S-1	
	Sample Size	Accept-ance No.		Sample Size	Accept-ance No	Sample Size	Accept-ance No.
1	2	3	4	5	6	7	8
Upto 280	32	3	32	8	1	3	0
281-500	50	5	50	8	1	3	0
501-1200	80	7	80	13	1	5	0
1201-3200	125	10	125	13	1	5	0

Note:

(a) Sampling Officer shall select sampling unit randomly as per IS: 4905 and select one number of store from each bundle, so as to make desired sample size as given in column (2), and compare with certified / approved sample for shade and other visual defects

(b) On visual examination if sample found satisfactory, Samples drawn as per column (5) for lab testing shall be drawn randomly as per IS : 4905 from the samples originally drawn as per column (2)

(c) For Chemical parameters sample to be drawn as per column (7) at random as per IS : 4905 from those samples drawn as per column (5)

(d) Lot Size : 32,000 Nos (Max.)

(e) One sample randomly shall be drawn from each bundle for detailed check at visual examination.

Prov. Specification No. S/5094/TC-1(b)/Cap Bal OG (Imp.)

Appendix 'B'

DIMENSIONS CHART

Size	Internal Circumference Of Cap	Length of Panel	Length of Neck Flap at Front	Length of Neck Flap at Back Centre	Width of Neck Flap at front Bottom	Circumference of Peak	
						Outer Periphery	Inner Periphery
	A	B	C	D	E	F	G
Small	60	15	18	11	11	28	20
Medium	62	16	19	12	11	28	20
Large	64	17	20	13	11	28	20
Tolerance	± 1.0	± 0.5	± 0.5	± 0.5	± 0.5	± 0.5	± 0.5

Note : All dimensions and tolerances are in 'cm'

Prov. Specification No. S/5094/TC-1(b)/Cap Bal OG (Imp.)

Appendix 'C'

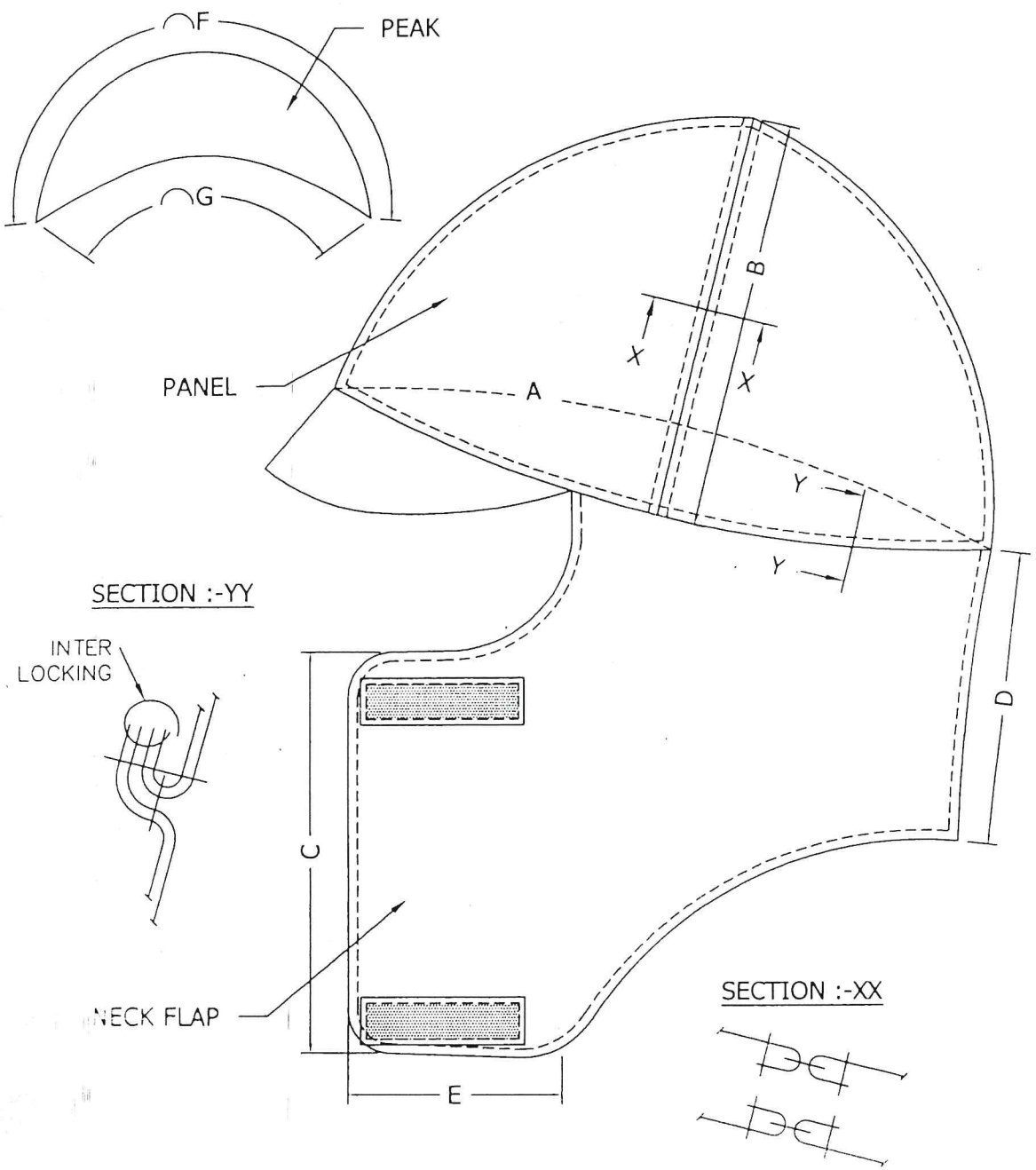
POLYESTER FLEECE FABRIC KNITTED OG

The Cap shall be manufactured by using Polyester Fleece Fabric Knitted OG. The technical particulars of the Fleece fabric Knitted OG shall conform as under and withstand the tests as described.

Parameters	Requirements	Tolerance	Test Method
Identification & Fiber Composition	Polyester 100%	-	IS-667:1981 Reaffirmed 2013
Mass/m^2 (g)	280	± 5%	IS-1964:2001 Reaffirmed -2010
% Area Shrinkage	1.0	Max.	IS-2977:1989 Amdt. No. 1 Reaffirmed-2013
pH value of aqueous extract	6.0 - 8.5	-	IS- 1390 (cold method):1983 Reaffirmed- 2009
Colour fastness to Light	5 or better	-	IS-2454:1985 Amdt. No.1 Reaffirmed -2013 or ISO:105-A02
Colour fastness to washing (i) change in colour (ii) staining on polyester (iii)staining on cotton	 4 or better 4 or better 4 or better	-	IS/ISO:105-C10:2006 Test No.C-3
Bursting Strength Kg/Cm^2 (Single Layer)	9.0	Min.	IS-1966:1976 First Rev.Reaffirmed- 2009 Amdt No. 1

PROV SPECN No S/5094/CAP BAL OG (IMP)

APPENDIX 'D'



	DATE	NAME
DGN.		
DRN.		Ajay Kumar
CHD.		Ajay Kumar
TRD.		
COMP.		

SCALE : ---

CAP BALACLAVA OG (IMPROVED)

CONTROLLERATE OF QUALITY ASSURANCE (TEXTILE & CLOTHING) MINISTRY OF DEFENCE (DGQA) KANPUR

ALL DIMENSIONS ARE IN MILLIMETERS

PROV SPECN No S/5094/CAP BAL OG (IMP)

TC-4/26/2015