

PN SPECIFICATION NO 13/2021



PAKISTAN NAVY SPECIFICATION 13/2021
PROMULGATION DATE: 10 NOVEMBER 2021

PN FEMALE OFFICERS CAP

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Prepared by:

Direktorate of Indigenous Technical Development
Naval Headquarters, NSSD,
West Wharf Road
KARACHI

Tel: 021 48508410
Fax: 021 99214765

PROMULGATION ORDER

1. This specification is hereby approved and promulgated for information, guidance and compliance by the relevant person.
2. The details contained in the specification are to be studied, interpreted and implemented with due regards to the interest of the Service.

SUGGESTIONS FOR AMENDMENT

The specification has been prepared to bring the test methods and procedures in line with up-to-date PN requirements and facilities held in Pakistan. CINS may request to amend any test requirement/ test procedure in light of the experience emanating from its inspection history, through the feedback form placed at Annex G. However, such an alteration will be effective when the amendment is promulgated by this Directorate, and will be effective on the contracts which materialize after the promulgation date of respective amendment.

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RECORD OF CHANGES/ AMENDMENT

PN SPECIFICATION 13/2021
(PN FEMALE OFFICERS CAP)

0101 DESIGNATION

1. PN Female Officers Cap.

0102 USAGE

1. These PN Female Officers Cap used with Working and Ceremonial Dresses, worn by Female Officers of Pak Navy.

0103 INTRODUCTION

1. This specification is prepared by Directorate of Indigenous Technical Development, Karachi, to provide necessary guidance to the potential manufacturers/ suppliers of the items mentioned herein. This specification is to be used for testing and deciding upon acceptance, or otherwise, of the items mentioned. Any alteration or addition in this specification can be suggested to ITD wing (NRDI). However, it cannot be implemented without prior approval from DNS.

2. This specification booklet includes 07 Annexes and consists 29 pages, including the cover.

0104 SCOPE

1. This specification covers the technical/ manufacturing requirements of PN Female Officers Cap worn with working and ceremonial Dresses. It defines and lays down the quality standards, details of materials, workmanship and finish. It also defines brief requirement and process of sampling, testing, inspection acceptance/ rejection, marking, preservation, packing and delivery etc. of PN Female Officers Cap.

2. The supplier/ manufacturer shall comply in every respect with the terms of this specification and ensure that the stores conform to it, in all respects.

0105 RELATED DOCUMENTS

1. The latest standards documents that have been referred to in this specification are:

a.	AATCC-20 A	Fiber Analysis –Qualitative.
b.	AATCC 61-3A	Determination of Peel strength and Shear Strength
c.	AATCC 16	Color fastness to Light
d.	ASTM-D 2261	Determination of Stitch Tear Strength
e.	ASTM D 1874-70	Determination of Thickness
f.	ISO 3801	Determination of Mass per unit Length
g.	ISO 13934	Determination of maximum force and elongation.
h.	ISO 13934-01	Breaking strength
j.	ISO 105-E01	Color fastness to water.
k.	ISO 105 E02	Color fastness to sea water
l.	ISO-105-E04	Color Fastness to Perspiration

m.	ISO 105 X 12	Color fastness to Rubbing
n.	ISO 105 E04	Color Fastness To Perspiration
p.	ISO 105 C10 C(3)	Color Fastness to Washing
q.	ISO 105 J02	Method for Calculating Berger Value

0106 TERMS & DEFINITIONS

1. Definitions for the terms used in this standard are given at Annex A of this specification.

0107 TECHNICAL DETAILS OF PN FEMALE OFFICERS CAP

1. The Technical Details of PN Female Officers Cap are mentioned at Annex B of this specification.

2. Hood and Brim

- a. The body is blocked and shaped as the standard pattern to form the inner crown and brim.
- b. The edge of the brim is to be bound using seam type (lock stitch) with the join at the center back of the hat.
- c. Brim measurements are to be as specified in measurement scheduled (Annex C).
- d. Brim embellishment of 3mm x width is used for Cdr and above. Same is sewn onto the outside of the brim, along the bottom edge of brim binding. The end of the braid is to finish at the center back of the brim, punctured through the brim and sewn under the brim binding on the inside.

3. Crown Former/ Plastic Rubber Sheet

- a. A Rubber former is to provide the rigidity/ Stiffness for the crown, and should be vacuum molded to the oviform shape.
- b. The former is to be sewn to the body with at least four stitches per 2cm.
- c. Four portions of touch and close fastener, hook elements, black, 4cm in length and 0.5cm from the bottom edge, are to be sewn to the former/ shell around the circumference, positioned at the center front, back and sides.

4. Head Leather/ Absorbent Fabric

- a. Each hat is to have absorbent fabric 3cm deep, the ends of which are to be overlapped not less than 1cm.
- b. The absorbent fabric is to be positioned 1cm above the base of the crown former.
- c. The absorbent fabric when attached by either drumming or by conventional methods must provide the same degree of comfort as that provided by the standard Pattern.

5. Additional Headband/ Mohar band

- a. The additional headband is to be seamed 1.5 cm with the corners turned and stitched to avoid fraying.
- b. The band is to be positioned with the join at the center front.
- c. One row of Russia braid 6mm in width is to sewn on the top edge of the head band (or two rows of 3mm Russia braid without gap).

6. **Tricorne Shaping**

- a. The brim edge is to be lifted to touch the top edge of the additional headband, and be sewn to the additional headband 10cm either side of the center front, and at the center back.
- b. Measurements are for size 54; other sizes are to be proportionate.

7. **Cover**

- a. The cover parts are to be cut with the ribbed effect of the PVC cloth in the following directions;
- b. Crown tip – front to rear.
- c. Side crown – vertical at center front.
- d. The crown tip, oval in shape, is to comply with the measurements schedule (Annex C).
- e. The side crown, cut one piece, is to be joined at the center back using Lock stitch with the seam allowance pressed to one side and edge stitched 0.2cm from the seam.
- f. The crown tip and side crown are to be joined using seam type 2.02.03 of BS 3870 with edge stitching on the side crown 0.2cm from the seam.
- g. Four portions of touch and close fastener, pile element, white, 4cm in length are to be positioned 0.5cm from the bottom edge of the side crown, spaced equidistantly around the circumference at the center front, back and sides.
- h. All hats are to be provisioned with two covers, one fitted to the hat and a replacement cover.

8. **Chinstrap and Loop**

- a. A ribbon cut approximately 68cm long (effective length no less than 62cm), is to be securely sewn to the hood of the hat only.
- b. Positioned centrally 1.5cm above the head leather on the right side of the hat (when worn), to form a chinstrap.
- c. A ribbon cut approximately 10cm long (effective length no less than 2cm doubled), is to be securely sewn to the hood of the hat only.
- d. Positioned centrally 1.5cm above the head leather on the left side of the hat (when worn), to form a loop.

9. **Seams and Stitching to BS 3870**

- a. Machine stitching is to be type lock stitch with at least eight but not more than ten stitches per 2cm.
- b. Unless otherwise stated in the body of the specification.

10. **General**

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- a. Sewing thread may be treated with a stain free lubricants.
- b. The hats are to be free from all ends of sewing thread, be locked and pressed to retain the required appearance and oviform shape at condition.
- c. All seams are to be free from pucker.
- d. The contractor must ensure that the hat is manufactured with a high regard to appearance, comfort and durability.

0108. QUALITY OF WORKMANSHIP AND FINISHING

1. The Workmanship and finish of PN Female Officers Cap shall be best in quality and to the entire satisfaction of the Inspector.

0109. TESTING

1. The stores/ material during manufacture and after delivery shall be tested and examined as Inspector may consider necessary in order to determine whether they conform to Annex B of this specification. Inspecting Authority reserves the right to get any B/R samples tested from any reputable Laboratory other than PN wherever considered important by Inspecting Authority.

0110. BULK REPRESENTATIVE SAMPLES OF PN FEMALE OFFICERS CAP

1. No of samples drawn from bulk quantity for inspection/ testing are as per instruction of Inspecting Officer (if deemed appropriate) as per following table:

Lot Size	No. Sample
300 ≥500	03
501 ≥ 800	05
801 ≥ 1300	07
1301 ≥3200	10
3201≥8000	15
8001≥22000	30
22001≥110000	40

0111. TENDER SAMPLE

1. Tender sample to be approved by TSR Committee.
2. For each contract following material shall be supplied by the manufacturer at the time of tendering:

a.	PN Female Officers Cap	04 x samples color
b.	Inner Crown (Plastic Shell)	03 Samples/ 02 mtr
c.	Mohar Band/ Head Band	02 mtr
d.	Brim Binding	02 Samples/ 02 mtr
e.	Inner Lining	02 mtr
f.	Head Fabric	03 mtr
g.	Cover	02 mtr
h.	Chin Strap & Loop	01 mtr
j.	Thread for all Sewing	03 Bobbin each/ 100 mtr

0112. ADVANCE SAMPLE

1. Advance sample or pre-production sample, when required, shall be submitted in accordance with terms of the contract for inspection, as per Annex B, C and D and approved by CINS.
2. Whenever Tender, Advance or pre-production sample is not required, the suppliers/ manufacturer are advised in their own interest to submit to the Inspecting Officer or his representative an initial delivery of One % of the contract or 10 meters for inspection and testing.
3. The approval of Tender, Advance or pre-production sample, authorizes the commencement of bulk production but does not relieve the suppliers/ manufacturers from compliance with all the provisions of this specification. One approved sample shall be properly sealed by INS and returned to the firm for guidance; rest of the approved sample shall be retained by INS for future use in bulk Inspection (if deemed necessary).
4. The Pre-production sample shall be manufactured by the manufacturer with the same facilitates which will be used for manufacture of the bulk items.
5. Firm shall provide advance sample along with quality verification reports from an accredited laboratory, whenever asked/ required by Inspecting authority to ensure compliance of quality assurance parameters during production/ final internal inspection.

0113. INSPECTION

1. Bulk representative sample (B/R) random sampling will be carried out as per rules in vogue.
2. PN Female Officers Cap shall be tested and examined during manufacturing/ Stage inspection as Inspector may consider necessary, to determine whether they conform to PN specification w.r.t quality or not.
3. **Inspection of PN Female Officers Cap** The guidelines for Inspector w.r.t General defects are defined at Annex E and Inspection Criteria is defined at Annex F. PN Female Officers Cap shall be examined to ensure correctness of material, shade width evenness of dyes and other constructional details
4. **Inspection/ Acceptance and Rejection of Stores** Inspection/ acceptance is to be carried out to the entire satisfaction of Chief Inspector of Naval Stores or as per instruction/ procedure laid down in unit/ department Order.
 - a. **Stamping of accepted stores:** Each PN Female Officers Cap shall be stamped with Inspectors individually acceptance mark close to contractor marking/ labelling.
 - b. **Stamping of rejected stores:** The rejected items shall be marked with inspectors rejection mark close to contractor marking/ labelling to avoid resubmission by the supplier.
5. If on examination of 5% of any delivery, 20% of those examined from bulk supply are found NOT CONFORMING to this specification in respect of the pattern, dimensions,

workmanship and finish, the whole consignment may be rejected without any compromise.

6. All stores and packing NOT fully in accordance with this specification shall be rejected.

7. **Responsibility for Inspection** The supplier is responsible for the performance of all inspection requirements (examinations, tests etc.) as specified herein. PN reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

8. **Responsibility for Compliance** The inspection set forth in this specification shall become a part of the supplier's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to PN for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements. However, this does not authorize submission of known defective material, either indicated or actual, nor does it commit PN to acceptance of defective stores (material).

9. **Replacement by the Contractor** The supplier is responsible for replacement of the consignment or any part thereof, whenever it is found to be not conforming to this specification. The supplies so tendered in replacement, shall be subjected to testing/ Inspection and acceptance by the Inspecting Officer.

10. **Responsibility for Safety** The supplier/ manufacturer is fully responsible for the safety of supplies during inspection, storage at firm's premises, proper packing, dispatch and delivery up to consignee.

11. The CINS is the authority in all matters pertaining to Inspection.

0114. **SPECIAL INSTRUCTIONS**

1. **Care Label Instructions** Following care instructions in the form of leaflet OR attached with PN Female Officers Cap shall be provided in English and Urdu:

- a. To be washed/ rinsed delicately
- b. Warm/ hot water not to be used for washing
- c. Delicate clean method with mild soap/ detergent solution to be adopted whenever required
- d. Stain removing bleach should be avoided.
- e. Prolonged contact with sunlight should be avoided etc.

0115. **PACKING AND PRESERVATION DETAILS**

1. Quality of packing shall be examined/ tested as the Inspector may consider necessary in order to determine whether they conform to this specification.

- a. **Packing** The store when ordered to be delivered 'PACKED' shall be distributed evenly in each carton.

- (1) Each PN Female Officers Cap will be packed and wrapped in Polythene bag having thickness of 0.005 (0.127 mm).
- (2) The Polythene shall be of sufficient size to ensure PN Female Officers Cap are protected.
- (3) 01 x PN Female Officers Cap further packed in card board box and secured with tape.
- (4) Packing, marking and preservation will be done by the supplier as per specification and with adhesive tape of 10cm width of the best quality.
- (5) 10 x Boxes Female Officers Cap will be packed neatly in suitable carton.
- (6) Label (Identification & care) will be printed on a suitable fabric and stitched/ printed on inner side of PN Female Officers Cap as per Annex D.

c. **Packing Slip** A Packing Slip shall be enclosed in each package giving full details about the store packed i.e. Cat No. designation, quantity packed, contract No, Challan No and date I/Note No or Voucher No. and date, consignee, consignor, date of packing and packer's signature, Package No and weight of the individual Package.

0116. **IDENTIFICATION LABEL**

1. Each PN Female Officers Cap shall bear following clear and indelible information on both ends :

- a. Item name/ item description with size and NSN/ patt no.
- b. Contract number and Date.
- c. Year of manufacture.
- d. Firm's name, initials, or trade mark.
- e. Batch no.

0117. **PACKING LIST**

1. Firm is bound to provide a packing list of store offered for inspection along with the challan, which include complete details about the store i.e. Pattern No., Description of stores, size, quantity, contract No., and Date, Challan No. date and I/Note No. or voucher No. and date, consignee, Manufacturer/ firm's name, date of packing and packer's signature, QA certificate /Lab test report from any accredited lab.

0118. **MARKING OF STORES**

1. Each carton of PN Female Officers Cap will stenciled with quick drying Black indelible ink/ print in clearly define characters as per followings:

a. On Front and Top:

- (1) Consignee Address.
- (2) Contract No and date.

- (3) Description of Stores Packed and NSN/ Patt No.
- (4) Stowage/ Stacking Instructions.
- (5) Quantity of the Item packed.
- (6) Signature along with stamp of Packaging Manager/ rep of firm.

b. On Back:

- (1) Manufacturers name / Firm's name.
- (2) Voucher No. or Inspection note no. and date.
- (3) The No. of individual Package and the total No of Packages in the consignment joined by the word 'of' e.g. 2 of 300.
- (4) Weight of the package.
- (5) Month and year of packing.
- (6) Destination i.e. Railway station/ (Navy).

0119. DELIVERY

1. The consignment of store will be delivered in accordance with the terms of contract.
2. The store shall be delivered in Brand new, clean and dry condition.
3. The contractor/ manufacturer is fully responsible for the safety of the supplies during inspection, stage inspection, storage at firm's and consignee premises, proper packing, dispatch and delivery up to consignee.

XXXXXSDXXXXX

MUHAMMAD AFSAR
Captain Pakistan Navy
DID

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ANNEX A TO
PN SPECIFICATION NO.13/2021
PROMULGATION DATE 10 NOV 21

TERMS & DEFINITIONS

- A. **CINS:** Chief Inspector of Naval Stores
- B. **DITD:** Directorate of Indigenous Technical Development
- C. **DNS:** Directorate of Naval Store.
- D. **PNCSD:** Pakistan Navy Clothing Store Depot
- E. **PNCTA:** Pakistan Navy Central Testing Authority
- F. **Inspector:** The term inspector shall include the "inspection Authority", inspecting officer and their representatives, duly authorized for the purpose of discharging inspection duties involved.
- G. **Inspection Authority:** Chief Inspector of Naval Stores (CINS). His verdict in respect of Sealed Inspection matters is to be taken as final.
- H. **Inspecting Officer:** An officer nominated by the CINS for carrying out inspection of stores supplied by the supplier, against a specified contract or order, in accordance with the particulars stipulated therein.
- J. **Acceptance Quality Level (AQL):** It represent allowable limit/tolerance of defects or non-conformities in an offered store/ lot/batch. It represent in percentage, also known as Allowable Quality Limits.

ANNEX B TO
PN SPECIFICATION NO 13/2021
PROMULGATION DATE 10 NOV 21

TECHNICAL DETAILS OF PN OFFICERS CAP

S.NO	ITEMS	STANDARD/ METHOD	RESULT	
1. Body				
a.	Material	AATCC-20A	Wool = $70 \pm 5\%$ Polyester = $30 \pm 5\%$	
b.	Color	Visual analysis	19-4007 TCX (Black)	
c.	GSM	ISO-3801	320 gm ± 10 gm	
d.	Strength (50x 200 mm B.G)	ISO 13934-01	Warp = 320 ± 5 N Weft = 170 ± 5 N	
e.	Color Fastness to Perspiration 1) Change in Shade 2) Staining (a) Wool (b) Acrylic (c) Polyester (d) Nylon (e) Cotton (f) Acetate	ISO-105-E04	ACID 4 or better 4 or better 4 or better	ALKALI 4 or better 4 or better 4 or better
f.	Color fastness to Rubbing 1) Dry 2) Wet	ISO-105-X-12	4 or better 4 or better	
g.	Color Fastness to Water 1) Change in Shade 2) Staining (a) Wool (b) Acrylic (c) Polyester (d) Nylon (e) Cotton (f) Acetate	ISO-105-E01	4 or better 4 or better 4 or better	
h.	Color Fastness to Sea Water 1) Change in Shade 2) Staining (a) Wool (b) Acrylic (c) Polyester (d) Nylon (e) Cotton (f) Acetate	ISO-105-E02	4 or better 4 or better 4 or better	
j.	Color Fastness to Light	AATCC 16	4 or better	

2. Crown Former			
a.	Material	Chemical analysis/ Burning behavior	Rubber Foam/ Acrylonitrile Butadiene Styrene (ABS)
b.	Thickness 1) Crown 2) Sides	ASTM D 1874-70	(1.5 ± 0.1 mm) (1 ± 0.1 mm)
3. Cover			
a.	Material	AATCC 20 A	Polyester (Knitted)
b.	Color	Visual Analysis	White
c.	Berger whiteness	ISO-105-J02	150
d.	Knitted pattern	Visual analysis	Pique (embossed grain effect)
e.	GSM	ISO-3801	350 ± 10 gm
f.	Color Fastness to Washing 1) Change in Shade 2) Staining (a) Wool (b) Acrylic (c) Polyester (d) Nylon (e) Cotton (f) Acetate	ISO 105 C10 C(3)	4 or better 4 or better 4 or better 4 or better 4 or better 4 or better
g.	Color Fastness to Light 1) Change in Shade 2) Staining (a) Wool (b) Acrylic (c) Polyester (d) Nylon (e) Cotton (f) Acetate	AATCC 16	4 or better 4 or better 4 or better 4 or better 4 or better 4 or better
h.	Color Fastness to Water 1) Change in Shade 2) Staining (a) Wool (b) Acrylic (c) Polyester (d) Nylon (e) Cotton (f) Acetate	ISO-105-E01	4 or better 4 or better 4 or better 4 or better 4 or better 4 or better
j.	Color Fastness to Sea Water 1) Change in Shade 2) Staining (a) Wool (b) Acrylic (c) Polyester	ISO-105-E02	4 or better 4 or better 4 or better

	(d) Nylon (e) Cotton (f) Acetate		4 or better 4 or better 4 or better
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4. Head Band

a.	Material	AATCC 20 A	5 \pm 1% Wool 95 \pm 1% PC Fiber
b.	Color	Visual analysis	19-4007 TCX (Black)
c.	Construction 1) For It Cdr and below 2) For Cdr and above	Visual analysis	Braided worsted Ribbon petersham
d.	Dimension (Width) 1) For It Cdr and below 2) For Cdr and above	Physical analysis	45 \pm 1 mm 38 \pm 1 mm
e.	Head band embellishment 1) For Cdr and above (a) Construction (b) Color (c) Material (d) Width	Physical analysis	Braid , Russia Gold Synthetic 6 \pm 1mm
f.	Color Fastness to Light 1) Change in Shade 2) Staining (a) Wool (b) Acrylic (c) Polyester (d) Nylon (e) Cotton (f) Acetate	AATCC 16	GS 4 or better GS 4 or better GS 4 or better
g.	Color Fastness to Water 1) Change in Shade 2) Staining (a) Wool (b) Acrylic (c) Polyester (d) Nylon (e) Cotton (f) Acetate	ISO-105-E01	GS 4 or better GS 4 or better GS 4 or better
h.	Color Fastness to Sea Water 1) Change in Shade 2) Staining (a) Wool (b) Acrylic (c) Polyester (d) Nylon (e) Cotton (f) Acetate	ISO-105-E02	GS 4 or better GS 4 or better GS 4 or better

5. Chin Strap & Loop

a.	Material	AATCC 20 A	Polyester
b.	Construction	Visual	Grosgrain / Petersham
c.	1) Thickness 2) Width	ASTM D1874-70	0.37 \pm 0.10 mm 14 -16 mm

6. Touch & Close Fastener

a.	Material	AATCC 20 A	Nylon (Touch) Nylon (Close)
b.	Color	Visual analysis	White (Touch) 19-4007 TCX (Black) (Close)
c.	Width	ASTM D1874-70	19mm \pm 1 mm
d.	Edged finish	Visual analysis	Sealed
e.	Peel strength (Lbs./ inch/ min) (After 03 launderings)	AATCC 61-3A	1 \pm 0.05
f.	Shear Strength L, (After 03 launderings)	AATCC 61-3A	10 \pm 1
g.	Stitch Tear Strength, lbs. (min) 1) Hook 2) Loop	ASTM-D 2261	3.5 \pm 0.5 6 \pm 0.5

7. Inner Lining

8. Brim Binding

a.	Material	AATCC 20A	Cotton/ viscose
b.	Width	Physical	16 ± 1mm
c.	Color	Visual	19-4007 TCX (Black)
d.	Color fastness to light	AATCC 16	GS 4 or Better
e.	Color fastness to Rubbing	ISO-105- X12	

	1) Wet 2) Dry		GS 4 or Better GS 4 or Better
f.	Color Fastness to Washing 1) Change in Shade 2) Staining (a) Wool (b) Acrylic (c) Polyester (d) Nylon (e) Cotton (f) Acetate	ISO 105 C10 C(3)	4 or better 4 or better 4 or better 4 or better 4 or better 4 or better
g.	Color Fastness to Perspiration 1) Change in Shade 2) Staining (a) Wool (b) Acrylic (c) Polyester (d) Nylon (e) Cotton (f) Acetate	ISO 105 E04	4 or better 4 or better 4 or better 4 or better 4 or better 4 or better
h.	Color Fastness to Sea water 1) Change in Shade 2) Staining (a) Wool (b) Acrylic (c) Polyester (d) Nylon (e) Cotton (f) Acetate	ISO 105 E02	4 or better 4 or better 4 or better 4 or better 4 or better 4 or better
9. Sewing Thread			
a.	Material	AATCC 20 A	100 %polyester
b.	No of stitches per inch(SPI)	Visual Analysis/ Manual	7/8
c.	Shade		White or Match with main fabric
d.	Construction		Spun Thread
e.	Hot Iron effect (after hot ironing at $150^{\circ}\text{C} \pm 10^{\circ}\text{C}$ for 0.5 sec)	Visual/ Manual	No distortion in thread
10. Absorbent Fabric			
a.	Material	AATCC 20A	Rexene
b.	Length	Physical Analysis	248 ± 2 mm
c.	Thickness	ASTM D1874-70	1.3 ± 0.2 mm
d.	Color	Visual Analysis	19-4007 TCX (Black)
e.	Breaking strength (50 x 200 BG)	ISO 13934-01	302 ± 10 N 62 ± 05 N
f.	Color fastness to Rubbing	ISO-105-X12	

	1) Wet 2) Dry		GS 4 or Better GS 4 or Better
11. Air Vent			
a.	Material	Chemical analysis	Mild steel
b.	Lacquered	Visual / chemical	Nickel coating Finish
c.	Dia 1) Inner 2) Outer	Physical Analysis	$10 \pm 1\text{mm}$ $18 \pm 1\text{mm}$

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ANNEX C TO
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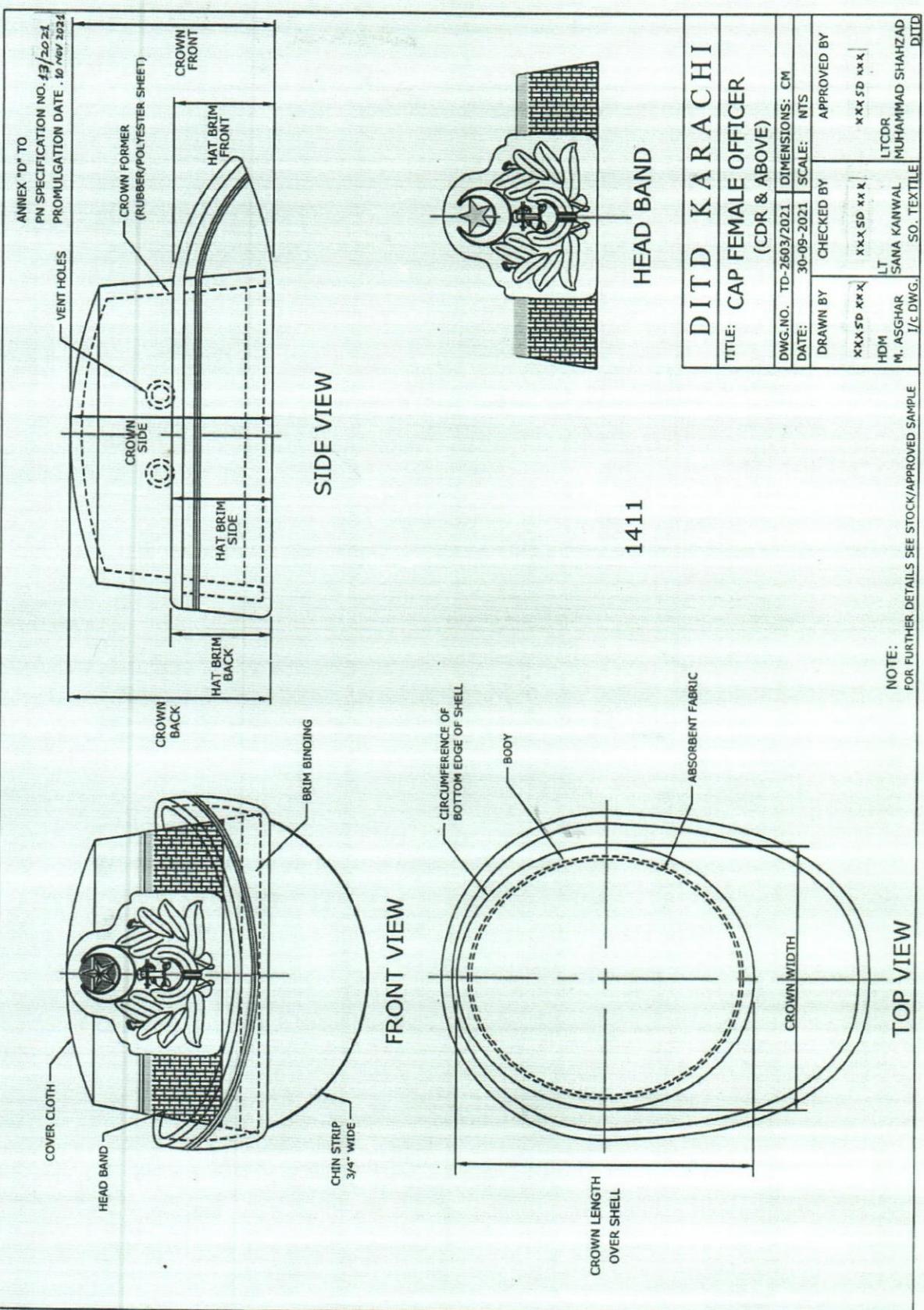
SCHEDULE OF MEASUREMENTS

Hat size & internal circumference	49	50	51	52	53	54	55	56	57	58	59	60	61
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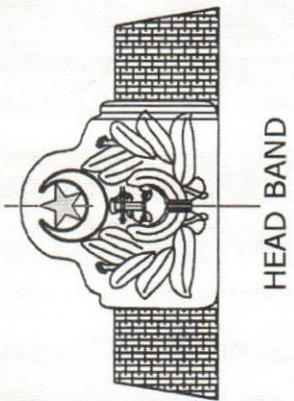
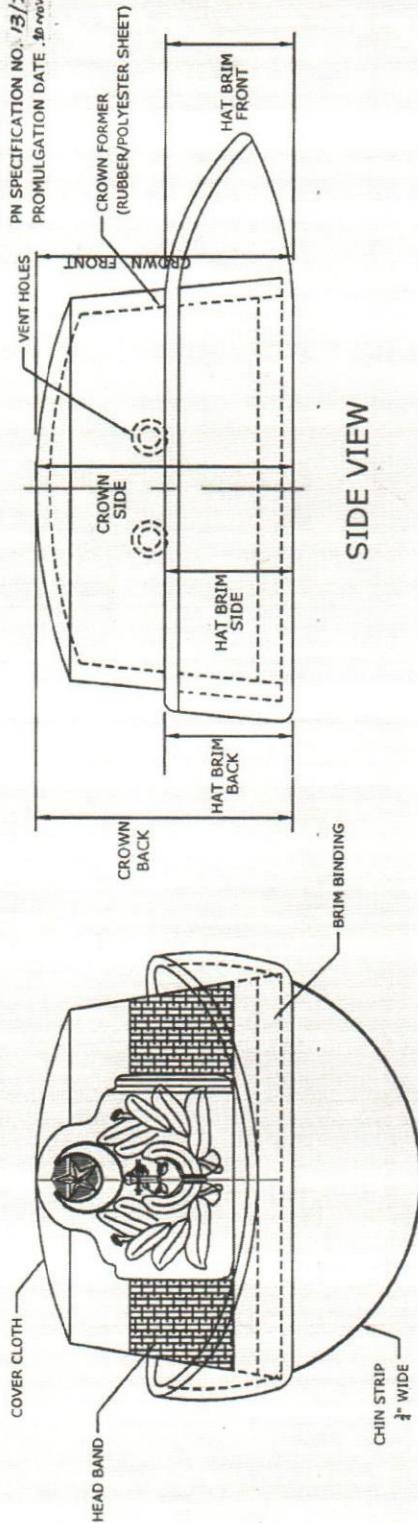
TABLE 7 – MEASUREMENTS AND TOLERANCES

Hat size	49	50	51	52	53	54	55	56	57	58	59	60	61
Cover	Circumference of bottom edge of shell	54.0	56.0	56.0	58.0	58.0	59.2	59.2	61.6	61.6	62.5	62.5	64.0
Crown width	Crown length on shell	12.5	13.0	13.5	14.1	14.1	15.0	15.0	15.5	15.5	15.5	16.0	16.0
Cover	Crown Front	14.0	14.5	15.0	15.0	15.5	15.5	16.1	16.1	16.4	16.4	17.0	17.0
Crown	Centre Back	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
Sides	Sides	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Hat Brim	Centre Front	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	Centre Back	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Sides	Tolerances +/- (mm)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0

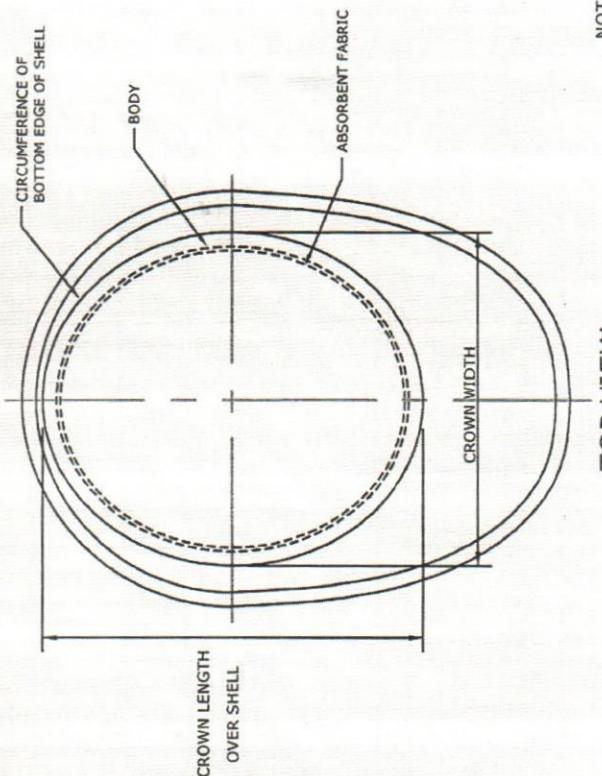
Note: All measurements are in CM.



ANNEX "D" TO
PN SPECIFICATION NO.: 13/2021
PROMULGATION DATE: 19-Nov-2021



1380



DITD KARACHI
TITLE: PEAK CAP FEMALE OFFICER

DWG. NO.	TD-2573/2021	DIMENSIONS: CM
DATE:	19-03-2021	SCALE: NTS
DRAWN BY	CHECKED BY	APPROVED BY
XxxSDxxx	XxxSDxxx	XxxSDxxx
HDM M. ASGHAR I/C DWG.	LT SANA KANWAL SO. TEXTILE	CAPTAIN MUHAMMAD AFSAR DITD

NOTE:
FOR FURTHER DETAILS SEE STOCK/APPROVED SAMPLE

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ANNEX E TO
PN SPECIFICATION NO 13/2021
PROMULGATION DATE 10 NOV 21

GENERAL DEFECTS
(ASTM D-3990)

<u>S. No</u>	<u>Defects</u>	<u>Definition</u>
<u>FABRIC</u>		
a.	Abrasion Mark (bruise, Chafe Mark or rub)	An area of fabric damaged by friction Damaged due to abraded or uneven surface in a machine
b.	Barré Mark	An unintentional, repetitive visual pattern of continuous bars and stripes usually parallel to the filling of woven fabric or to the courses of circular knit fabric. Barré can be caused by physical, optical, or dye differences in the yarns, geometric differences in the fabric structure, or by any combination of these differences.
c.	Blotch,	An off colored area of any shape caused by grease or Oil. (Syn. oil spot). Cause due to leakage/slippage from machine.
d.	Bow	A fabric condition resulting when filling yarns or knitting courses are displaced from a line perpendicular to the selvages and form one or more arcs across the width of fabric.
e.	Broken/ Stitch	Sewing threads are broken due to some make problem.
f.	Clip mark:	An open place causing a streak of variable length approximately parallel of the length of width.
g.	Decanting Mark	A crease marks or impression extending across the cloth near the beginning or end of a piece Due to the thickness of the fabric leader seam.
h.	Double Pick	In woven fabrics, two picks wrongly place in the same shade.
j.	Draw Back	A weave distortion characterized by tight and stack places in the same warp yarn.
k.	End out	A void caused by a missing warp yarn.
l.	Float	In woven fabrics, the portion of a warp or filling yarn that extends unbound over two or more warp or filling yarns, in knitted fabrics, that portion of a yarn that is not knitted into loops.

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m.	Frosting	A change in color in a limited area of fabric cause by abrasive wear.
n.	Hole	In fabric, imperfection, wear one or more yarn or sufficiently damaged to create an aperture.
p.	Fuzzy	Characterized by a hair appearance due to protruding broken fibers or filaments.
q.	Let-off Mark	In woven fabrics, a corrugated defect pattern distributed across the fabric width.
r.	Loom fly	Waste fibers create during weaving that are woven into a fabric.
s.	Loop Salvage	An improperly woven salvage of uneven width or a salvage containing irregular filling loops extending beyond the outside edges.
t.	Messiness	Surface distortion in a fabric characterized by objectionable unevenness due to many minor deformations.
u.	Pin Hole	In fabric, a very small hole, approximately the size of the across section of the pin.
v.	Scalloped Salvage	An abrupt, narrow indentation in the salvage.
w.	Shiner	A streak, usually short caused of a lustrous section of filament yarn.
x.	Smash	In woven fabrics, relatively large hole characterized by broken yarn ends and floating picks.
y.	Skew	A fabric condition resulting when filling yarns or knitted course are angularly displace from a line perpendicular to the edge or side of the fabric.
z.	Snag	In fabrics, a yarn or part of a yarn pulled or plucked from the surface.
aa.	Thin Place	In fabric, an intentionally in a fabric appearance characterized by a small area of loosely placed yarn or by a congregation of thin yarn as compared to the adjacent construction.
ab.	Tight Salvage	In woven fabrics, salvage yarn shorter than warp yarn in the body of the fabric.
ac.	Streak	An extended unintentionally strips narrow width, often a single yarn.
ad.	Tram Mage	In woven crepes, a puckered area in which a filling yarn has twist running in the same direction for several picks instead of alternating S and Z twist.
ae.	Temple Mark	In woven fabrics, small holes or distortions adjacent to the salvage.

af.	Tender Mark	A visible deformation on the side edge or body of a fabric due to pressure for clips or pins.
ag.	Skip Stitch	Due to improper needle and looper action, some lines threads in stitch
ah.	Uneven way stitch	When the stitch line is not straight or properly wave
aj.	Cracked Stitch	Stitches are broken due to dress elasticity in the same line
ak.	Open Seam	Due to improper feeding or when two parts of the fabric are not sewing properly.
al.	Needle Hole	The hole created from the needle in the seam line during the sewing process
am.	Sharing/ Puckering	The gathered fabric inside the seam line
an.	Pleat	The folded fabric in the seam line
ap.	Twisting	When the seam line becomes curve from one edge to another edge is called twisting defect
aq.	Part up down	Two parts of the fabric are not equal in the seam edge.

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ANNEX F TO
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PROMULGATION DATE 10 NOV 21

Acceptable Quality Levels for PN Female Officers Cap

1. Acceptable Quality Level (AQL) is maximum average defective items in a lot or limit / percentage of defective items in product /offered store. It is expressed in a percentage. Number of average defective items is determined by following formula:

$$\text{Average defective item} = \frac{\text{No.of defective item found during inspection}}{\text{Total no.of item to be inspected}} \times 100$$

2. AQL process: it is used for inspection of finished product by the QC professionals. AQL standard is depend on the quality of the product to be inspected, random sampling, and experience of inspector Following AQL table is used to determine lot size/ offered store quantity, least No. of sample to be inspected, AQL%, and acceptance & rejection points:

<u>Lot/Batch Size</u>	<u>Sample Size</u>	<u>Materials</u>	<u>Finished PN Female Officer Cap</u>									
			• Acceptable/ Allowable defective sample (Ac) • Rejected /Exceed allowable limit of defective item (Re)									
			Critical Defects		Major Defects		Minor Defects		<u>Ac</u>	<u>Re</u>	<u>Ac</u>	<u>Re</u>
2 - 8	2		0	1	0	1	0	1	0	1	0	1
9 ~ 15	3		0	1	0	1	0	1	0	1	0	1
16 ~ 25	5		0	1	0	1	1	2	1	2	1	2
26 ~ 50	8		0	1	0	1	1	2	1	2	1	2
51 ~ 90	13		1	2	1	2	1	2	2	3	2	3
91 ~ 150	20		1	2	1	2	2	3	3	4	3	4
151 ~ 280	32		2	3	2	3	3	4	5	6	5	6
281 ~ 500	50		3	4	3	4	5	6	7	8	7	8

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501 ~ 1200	80	5	6	5	6	7	8	10	11
1201 ~ 3200	125	7	8	7	8	10	11	14	15
3201 ~ 10000	200	10	11	10	11	14	15	21	22
10001 ~ 35000	315	14	15	14	15	21	22	21	22
35001 ~ 150000	500	21	22	21	22	21	22	21	22
150001 ~ 500000	800	21	22	21	22	21	22	21	22
500001 ~ Over	1250	21	22	21	22	21	22	21	22

3. If the inspector have time constrain then AQL is beneficial/ helpful in inspection of whole lot/ offered store. It safe time, cost and give effective/ statistical result of product /offered store. e.g. If inspector needs 1 minute to check the item , the quantity to be inspected is 2,500 items then it took 42 hours to check the whole consignment/ offered store. It means 26 days approx. for one store. Calculation is as follows:

$$\frac{1 \text{ min} \times 1 \text{ hr}}{1 \text{ item} \times 60 \text{ min}} \times 2,500 \text{ items} = 42 \text{ hrs} \cong 02 \text{ days}$$

After Implementing AQL standard so the sample taken from the lot/ offered store is 200 items/ sample:

$$\frac{1 \text{ min} \times 1 \text{ hr}}{1 \text{ item} \times 60 \text{ min}} \times 2,00 \text{ items} = 3.33 \text{ hrs} \cong \text{half quarter od a day}$$

4. Quality parameters/ AQL limits may be defined by Inspecting Authority (if deemed appropriate) and communicate to the manufacturer, so the manufacturer set their quality levels (AQL limits) accordingly for their internal audit. Therefore, good quality product is ready for inspection.

ANNEX G TO
PN SPECIFICATION No 13/2021
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FEED BACK FORM

Unit Name: _____

Item Description#: _____

Issue/Problem occurred: _____

PN SPEC #: _____

Possibility to resolve Issue: _____

Any Other Remarks: _____

Note:

- It's good to give feedback for improvement in any clothing Item.
- Recurring problem will also be intimated through this form.

Name Stamp

COUNTERSIGNED By CO/Admin Authority

Name Stamp

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