



PN SPECIFICATION NO 06/2019

PAKISTAN NAVY SPECIFICATION 06/2019

PROMULGATION DATE: 30 Aug 2019

DUPATTA WITH DRESS 4B FEMALE OFFICER/ AFNS/ FEMALE SAILORS

Prepared by:

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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 E. 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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1. **DESIGNATION**

1.1 Dupatta with Dress No. 4B for Female Officers/ AFNS & Female Sailors

2. **USAGE**

2.1 This Dupatta with Dress No. 4B will be used by Female Officers/ AFNS / Female Sailors

3. **INTRODUCTION**

3.1 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 Directorate. However, it cannot be implemented without prior approval of DNS. This specification is based on sample approved by **Dress Committee**.

3.2 This specification booklet includes 06 Annexes, and consists 19 pages, including the cover.

4. **SCOPE**

4.1 This specification covers the technical/ manufacturing requirements of Dupatta with Dress No. 4B to be used by Female Officers/ AFNS & Female Sailors of Pakistan Navy. It defines and lays down the quality standards, and details of materials, workmanship and finish. It also defines briefly requirement and process of sampling, testing, inspection acceptance/rejection, marking, preservation, packing and delivery etc.

4.2 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.

5. **RELATED DOCUMENTS**

5.1 The standards and documents that have been referred to in this specification are:

a. ISO 1833	Textile – Quantitative chemical analysis
b. ISO-3801	Determination of mass per unit length and area
c. ISO-7211/2	Determination of number of threads per unit length
d. ISO-7211/5	Determination of linear density of yarn removed from fabric
e. ISO-105-C03	Colour fastness to Washing test No. 3
f. ISO-105-E02	Colour fastness to Seawater test
g. ISO-105-X12	Colour fastness to Rubbing test
h. ISO-105-E04	Colour fastness to Perspiration
j. ISO-13934-01 1999	Textile- Tensile properties of fabrics (strip method)
k. ISO-13937-01 1999	Textile- Tear properties of fabric (Elmendorf)
m. AATCC 128-2009	Wrinkle Recovery of fabric
n. AATCC 79-2010	Absorbency of Textiles
o. ISO 9237:1995	Determination of permeability of fabric to air
p. AATCC 195:2010	Test for evaluation of Moisture Management
q. ASTM D 1230	Flammability of Apparels
r. ISO 6330 (3A)	Domestic washing and drying procedures for textile testing
s. BS EN ISO 12945-2	Determination of fabric propensity to surface fuzzing and to pilling
t. BS EN ISO 12947-4	Determination of the abrasion resistance of fabrics by the

u. BS EN 25077	Martindale method
v. ISO 3071	Determination of Dimensional Change in washing and drying
x. AATCC 16 option 3	Determination of pH of aqueous extract
y. ASTM D5169	Colorfastness to light
z. ASTM D 5170	Dynamic shear strength of hook and loops touch fastener (Velcro)
	T Peel Strength of hook and loop touch fastener (Velcro)

6. TERMS & DEFINITIONS

6.1 Definitions for the terms used in this standard are given at Annex A.

7. TECHNICAL DETAILS FOR DUPATTA WITH DRESS NO. 4B FEMALE OFFICERS/ AFNS/ FEMALE SAILORS

7.1 The technical details of Dupatta with Dress No 4B is at Annex B of this specification.

8. MANUFACTURING DETAILS

8.1 Dupatta is manufactured as per measurement schedule and drawing at Annex C & D respective. Sealed stock sample can be obtained from DNS/ PNCSD.

8.2 Dupatta should be manufactured with preshrunk fabric.

8.3 Ends of Dupatta shall be properly over locked.

8.4 The machine stitch shall be of even tension and all loose ends shall be trimmed off.

8.5 Number of stitches for Dupatta shall be 7-8 per 25 cm.

8.6 Dupatta Consist of this two portion having 03 pleats each and it is joint from the center to form 'V' shape.

8.7 Velcro (Loop & Hook) for Pak Navy' Soft tally as per PN Specification No 03/16 promulgate vide reference PN/MDITD/03/182399 dated 03 May 16 shall be attached on Dupatta as per drawing attached at Annex D of this specification.

8.8 Velcro (Loop & Hook) for Soft Name Tally as per PN Specification No 04/14 shall be attached as per drawing at Annex D of this Specification.

8.9 Velcro of best quality is used in dupatta and its sticking power remain same after 20 x no of washes & hot ironing/steam press or it may complies all the quality assurance parameters determine in MIL Spec i.e. A-A 55126 B.

8.10 Velcro (Loop) is stitched at front side of dupatta for Soft Name Tally/ Pak Navy tally.

8.11 Velcro (Hook) is stitched at back side of dupatta.

9. QUALITY OF WORKMANSHIP AND FINISHING

9.1 Workmanship and finish of the Dupatta with Dress no. 4B shall be equal to the sealed sample. It shall be best of its class and to the entire satisfaction of the Inspector. Sealed/ Approved sample is approved by DNS/ Competent Authority and held in custody of PNCSD/CINS or accepted/approved from bulk supply inspected by CINS.

10. **TESTING**

10.1 The material shall be subjected to tests laid down in this specification at Annex B of this specification and related documents. At least 03 X meters or 05X Dupatta alongwith accessories used in manufacturing of Dupatta will be required to complete relevant tests mentioned at Annex B of this specification. The material may also be subjected to such tests which are deemed necessary by the Inspection Authority in order to determine their suitability. Inspecting Authority reserves the right to get the B/R samples tested from any reputable laboratory other than PN. However, any test considered important by Inspecting Authority other than Annex B may also be conducted in order to check its suitability.

11. **TENDER SAMPLE**

11.1 Tender sample to be approved by TSR Committee.

11.2 For each contract 05 samples of Dupatta shall be supplied by the manufacturer at the time of tendering.

12. **ADVANCE SAMPLE**

12.1 Advance sample or pre-production sample, when required, shall be submitted in accordance with terms of the contract for inspection, testing and approval by CINS. The minimum quantities required are 05 Dupatta along with samples of materials used in manufacturing of Dupatta for inspection.

12.2 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 ten samples, whichever are more along with samples of materials for inspection.

12.3 The approval of the sample mentioned in Para 11 & 12 authorizes the commencement of bulk production but does not relieve the suppliers/ manufactures from compliance with all the provisions of this specification. One approved sample after rectification of all observations highlighted by Inspecting Officer 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 appropriate).

12.4 The Pre-production sample shall be manufactured by the manufacturer with the same facilities which will be used for manufacturing of the bulk items.

12.5 Firm shall provide advance sample along with quality verification reports of fabric from an accredited laboratory to ensure in process inspection/ quality procedure of the firm.

13. **INSPECTION**

13.1 **Bulk Representative Sample** B/R random sampling will be carried out as per rules in vogue.

13.2 **Bulk Inspection** Bulk inspection will be carried out after satisfactory completion of Visual Examination and Testing of B/R Sample.

13.3 **Inspection of Store** 100% of the offered store shall be inspected. The guide lines for such examination/inspection are listed at Annex E. or accordingly to Inspection criteria determined by inspecting Authority. Stage inspection of Dupatta be carried out as deemed appropriate.

13.4 **Inspection/ Acceptance and Rejection of Stores** Inspection/ acceptance is to be carried out to the satisfaction of Chief Inspector Naval Stores.

13.5. The store shall be examined for the correctness of material, shape, design, dimension, size, workmanship and finish.

13.6. All store shall be inspected w.r.t defective shape, discoloration/ fading, pinholes, packing of dresses are to be especially checked.

13.7. CINS reserves the right to reject the whole supply in case, upon examination, material or packing of any sample or portion of the consignment is found NOT CONFORMING to this specification.

13.8. 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.

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

13.10. Dupatta with major defects as described in Annex E, of this specification will be rejected.

13.11 **Responsibility For Inspection.** The supplier is responsible for the performance of all inspection requirements (examinations and tests) 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.

13.12 **Replacement By The Contractor** The supplier /manufacturer 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.

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

13.14 **Inspection Criteria** The Inspection of stores will be done as per international inspection procedure i.e 4 points systems or criteria determined by Inspecting Authority.

14. **STAMPING OF ACCEPTED/ REJECTED STORES BY THE INSPECTOR**

14.1 Following instructions are to be followed:

14.2 **Stamping of Accepted Stores** Each acceptable Dupatta shall be stamped with Inspector's Individual Acceptance Mark. The stamping shall be legible.

14.3 **Stamping of Rejected Stores** The rejected Dupatta shall be marked with Inspector's Rejection Mark to avoid re-submission by the supplier.

14.4 The Inspector is the authority in all matters pertaining to inspection.

15. **SPECIAL INSTRUCTIONS**

15.1 **Care Instructions** Care instructions in English and Urdu shall be attached with each Dupatta as indicated in the drawing and have minimum requirement as follows:

- a. Washing procedure.
- b. Drying procedure.
- c. Any Prohibition.

16. **PACKING DETAILS**

16.1. The store when ordered to be delivered 'PACKED' shall be packed as per following instructions:

- a. Each Dupatta shall be packed in a neat, dry and clean condition in standard polyethylene.
- b. 50 Dupatta shall be further packed in a thick Boxboard.
- c. Each Box Board packing shall be secured and properly packed.

17. **IDENTIFICATION LABEL**

17.1. Dupatta shall bear following minimum information mentioned on identification label, attached as indicated in the drawing:

- a. Item name/ item description with NSN/Pattern No.
- b. Material Composition and size
- c. Contract number and Date
- d. Year of manufacture
- e. Contractor's name, initials, or trade mark
- f. Batch no.

18. **PACKING LIST**

18.1 Firm is bound to provide a packing list of store offered for inspection alongwith the challan, which include complete details about the store i.e Pattern No., Designation, Quality packed, size, quantity, contract No, and Date, Challan No. and Date. A packing list shall be enclosed after completion of inspection with each packed box giving full details about the stores packed i.e. Pattern No., Designation, quality packed, size, quantity, contract No, and Date, I/Note No. or voucher No. and date, consignee, Consignor, Date of packing and packer's signature.

19. **MARKING OF STORES**

19.1 In addition to any special marking required by contract or order, the marking of packages shall be stenciled with quick drying Black ink/ Paint in accordance with Specification No. NS/MISC/002/80 with clearly defined characters as described below:

- a. On Front and Top
 - (1) Consignee Address.
 - (2) Contract No and date.
 - (3) Description of Stores Packed and NSN/Patt no.
 - (4) Quantity of the Item packed.

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.

20. DELIVERY

20.1 The consignment of store will be delivered in accordance with the terms of contract.

20.2 The store shall be delivered in Brand new, clean and dry condition.

20.3 The contractor / manufacturer is fully responsible for the safety of the supplies during inspection, storage at firms premises proper packing, dispatch and delivery up to consignee.

xxxxsdcccccc
ASIF ALI PIRZADA
Commander Pakistan Navy
DID

Annexes:

- A. Terms & Definitions
- B. Technical Details of Dupatta with Dress No. 4B
- C. Measurements
- D. Drawing of Dupatta with Dress No.
- E. Guidelines for Inspection – General Defects
- F. Feedback Form

Distribution:

DP (N)

CINS

DNS

CO PNCSD

TERMS & DEFINITIONS

1. **Inspection Authority**. Chief Inspector of Naval Stores (CINS). His verdict in respect of inspection matters is to be taken as final.
2. **Inspecting Officer**. An officer nominated by the Chief Inspector of Naval Stores (CINS) for carrying out inspection of stores supplied by the supplier, against a specified contract or order, in accordance with the particulars stipulated therein.
3. **Inspector**. The term inspector shall include the "Inspection Authority", inspecting officer and their representatives, duly authorized for the purpose of discharging inspection duties involved.
4. **Sealed Pattern**. It denotes a pattern which was signed & sealed by DNS/ Competent Authority, held in the custody of PNCSD/ CINS and represents the standard of store in respect of material, dimensions, design, workmanship and finish, etc. There are sealed pattern for each store, which cannot be removed from custody of the Inspection Authority.
5. **Quality Packing**. It defines the quality of fabric to be packed i.e Weave pattern, Count of fabric etc.
6. **Hook Velcro/ Fastner**. Hook Velcro have tiny flexible hook on it's surface, hard in nature/ feeling and also called hard Velcro.
7. **Loop**. Loop Velcro have tiny loops on it's surface, soft in nature/ feeling and also called soft Velcro.

ANNEX B TO
PN SPECIFICATION NO 06/2019
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TECHNICAL DETAILS FOR DUPATTA WITH DRESS NO. 4B FEMALE OFFICERS.

S NO	ITEM	REQUIREMENT
BASE FABRIC MATERIAL SPECIFICATION OF DUPATTA WITH DRESS NO. 4B		
1.	Material	60% Cotton 40% Polyester
2.	Count of Yarn a. Warp b. Weft	20 ^s + 2 (29.5 ± 2 Tex) 16 ^s + 2 (37 ± 2 Tex) Ring spun Combed yarn shall be used
3.	Threads per Inch Warp Weft	123 ±5 (Ends) 63 ±5 (Picks)
4.	Colors Scheme a. Black b. Dark Grey c. Medium Grey d. Light Grey e. Grey f. Pastel Grey	19-1101 TCX 18-4006 TCX 17-4405 TCX 15-4003 TCX 16-4702 TCX 13-4303 TCX Or As per approved sample by DNS
5.	Weave Pattern	Twill weave 2/1 + Rip Stop
6.	Threads /Rip Warp Weft	2 each single 2 each single
7.	Size of Rip Warp Weft	6mm±1mm 6mm±1mm
8.	Weight (gm/sq.mtr)	245 gm ± 2%
9.	Finish	Mercerize, pre- shrink by sanforize and hydrophilic softener (nano finish)
10.	Finish width	59"
11.	Nature of Dye a. Ground b. Print	Vat Disperse Vat Disperse
12.	Digital Camouflage Design Pattern	As per Appendix I/ approved sample

BASE FABRIC PERFORMANCE TESTING		
1.	Color fastness to washing a. Change in Shade b. Staining	GS: 4 or better GS: 4 or better
2.	Color Fastness to Rubbing (Dry) Staining	GS: 4 or better
3.	Color Fastness to Rubbing (Wet) Staining	GS: 3 or better
4.	Color Fastness to light Change in Shade	GS: 4 or better
5.	Color Fastness to perspiration a. Change in Shade b. Staining	GS: 4 or better GS: 4 or better
6.	Color Fastness to Sea Water a. Change in Shade b. Staining	GS: 4 or better GS: 4 or better
7.	Tensile strength (N) a. Warp b. Weft	$1000 \pm 5\%$ $800 \pm 5\%$
8.	Tear Strength(N) a. Warp b. Weft	$44 \pm 5\%$ $48 \pm 5\%$
9.	Flammability	Class1 Flame spread time ≥ 3.5 sec
10.	Dimensional Stability test after 3 HL 40°C a. Warp b. Weft	$\pm 2\%$ $\pm 2\%$
11.	Wrinkle recovery	Minimum 2
12.	Crease recovery	$150^\circ \pm 3\%$
13.	Appearance after 5-10 washes (3A) with tumble dry	Satisfactory
14.	Pilling resistance after 5,000 cycles	Grade 4
15.	Abrasion resistance after 6,000 cycles	No thread break
16.	Air permeability(mm/sec at 100 Pa)	Minimum 45
17.	Moisture Management	0.65 Min
18.	Water absorbency (drop test) a. Front side b. Back side	7 sec(max) 6 sec (max)
19.	pH level	6-8
STITCHING THREAD SPECIFICATION		
1.	Material	Polyester
2.	Construction	2 cord each single
3.	Count of yarn	2/31.5 Tex $\pm 3\%$
4.	Breaking Strength (24")	2.23 Kg ± 250 gms
5.	Shade	Light grey or Pantone 15-4003 TCX
6.	Color fastness to washing (Test No. 3) a. Change in Shade b. Staining	GS: 4 GS: 4

VELCRO TAPE MATERIAL SPECIFICATION		
1.	Material (Class I) a. Hook b. Loop	Nylon Nylon
2.	Colour	Light grey or Pantone 15-4003 TCX
3.	Type –II	8 .5 mil 300 denier Hook
4.	Thickness in inches a. Hook b. Loop	0.05 (min) 0.095 (min)
5.	Width a. Hook b. Loop	01 inch 01 inch
6.	Weight Grams/ linear yard a. Hook b. Loop	4.7 5.9
VELCRO TAPE PERFORMANCE TESTING		
1.	a. Before sticking / unsticking 300 times at 300 g. b. After sticking / unsticking 300 times at 300g.	Satisfactory Satisfactory
4.	Breaking strength Lbs (min) a. Hook b. Loop	100 75
5.	Peel strength Lbs/ inch(min) a. Before wash b. After 03 laundering	1-1.5 1.0
6.	Shear strength, Lb/ sq inch/ (min) a. Before wash b. After 03 launderings	10 10
7.	Fray resistance after 03 laundering	No fraying observed

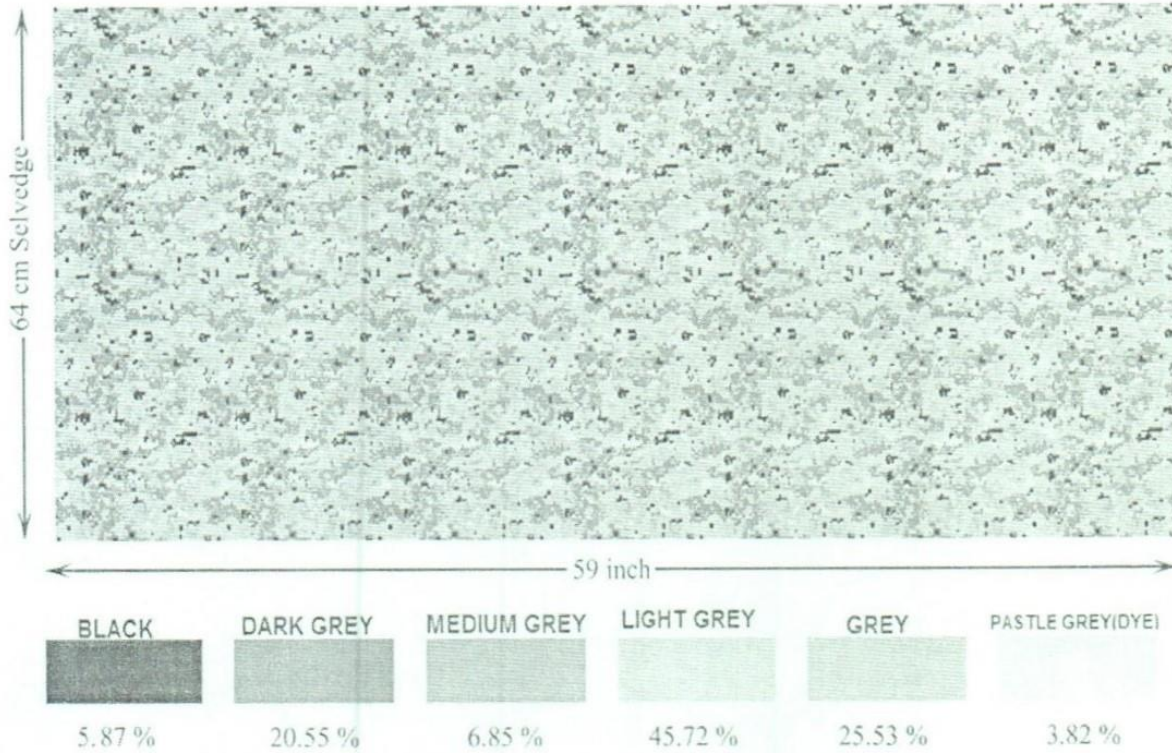
Appendix:

- I. Dupatta with Dress No. 4B.

APPENDIX I TO ANNEX B TO
PN SPECIFICATION NO 06/2019
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DIGITAL CAMOUFLAGE DESIGN/ PATTERN OF DRESS NO. 4B

4B Pixilated Camo



ANNEX C TO
PN SPECIFICATION NO 06/2019
PROMULGATION DATE 30 Aug 19

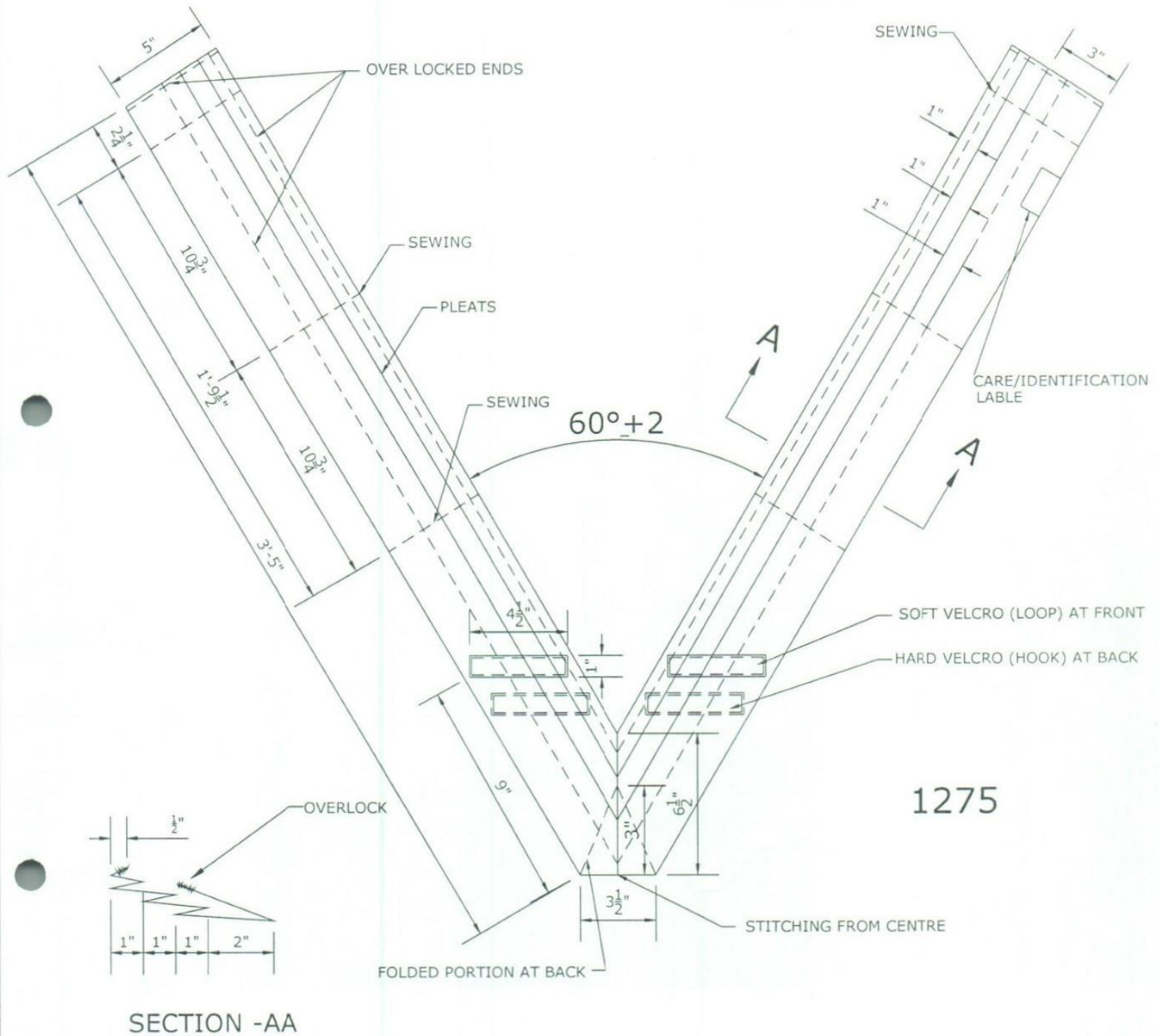
MEASUREMENT OF DUPATTA

S. NO	DESCRIPTION	SIZE		
		S	M	L
1.	Length (Feet) of Dupatta	6	7	7.5
2.	Finished Width (Inches) of Dupatta	4.5	5	5.5

Annex D

PN Specifiication No 06/2019

Promulgation date 30 Aug 2019



DITD KARACHI

TITLE:-

DUPATTA WITH DRESS NO.4B
FOR FEMALE OFFICERS/AFNS FEMALE SAILORS

DWG NO: TD-2468/2019

DIMENSION: INCHES

DATE: 26-06-2019

SCALE: NTS

DRAWN BY

CHECKED BY

APPROVED BY

--SD--

--SD--

--SD--

TARIQ AHMED
D/MAN

LT
SANA KANWAL
SO TEXTILE

CDR
ASIF ALI PIRZADA
DID

NOTE:-

FOR FURTHER DETAILS SEE APPROVED/STOCK SAMPLE.

ANNEX E TO
PN SPECIFICATION NO 06/2019
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GUIDELINES FOR INSPECTION – GENERAL DEFECTS

Defect
<ol style="list-style-type: none"> 1. <u>Material Defect and Workmanship Damages</u> <ol style="list-style-type: none"> a. Any hole, scissor or knife tear, mend, burn or weakening defect, such as smash, multiple float, loose slub, or needle chews, that might develop in to hole. b. Cloth stiffened, hardened, or seared by heat, where thermo activated shade. c. Any garment portion puckered, twisted, or pleated at joining seam. 2. <u>Shaded Parts</u> <ol style="list-style-type: none"> a. Any part shaded or any shade bar. 3. <u>Colour</u> <ol style="list-style-type: none"> a. Any component of not specified colour. 4. <u>Cleanliness</u> <ol style="list-style-type: none"> a. Any slub, spot, or stain on outer side. b. Threads ends not trimmed or loose threads ends not removed (to be scored only when condition exists on major portion of garment). c. Any shade identification stamping visible on outer side. 5. <u>Component and Assembly</u> <ol style="list-style-type: none"> a. Any component not as specified or any defect of component or defect of assembly not herein classified. b. Any component, component part, or required operation omitted or any other operation improperly performed not herein specified/ classified. 6. <u>Seams and Stitching</u> <ol style="list-style-type: none"> a. Any seam twisted, puckered, or pleated (unless otherwise classified herein) b. Any part of Jacket and Trouser caught in unrelated operation or stitching. c. Any edge not properly forced out, i.e, having fold more than specified.

- d. Ends of stitching that are not caught in other seam or stitching not securely tacked.
- e. Ends of seams or stitches that are not caught in other seams or stitching secured but backstitched for distance less than specified.
- f. Thread breaks not securely overstitched
- g. Stitching tension tight resulting in breakage of stitches when normal pull is applied.
- h. Stitching per 20 mm on major portion of seam one or two stitches more or less than specified, except on labels.
- j. Stitches per 20 mm on major portion of seam more than three stitches more or less than specified, except on labels.
- k. Any bar tacks omitted, loose, misplaced or not serving intended purpose.
- l. Three or more bar tacks missing, loose, misplaced, or not serving intended purpose on multiple pencil compartment pockets.
- m. Skipped or broken stitches in two or more sewn eyelets
- n. Stitch tension loose resulting in loose seam.
- p. Stitches in sewn eyelet one or two stitches less than specified.

ANNEX F TO
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FEED BACK FORM

Item Designation: _____

Pattern #: _____

Parent Equipment: _____

PN SPEC #: _____

Problem Faced: _____

Technical Solution: _____

Financial Effect (if any): _____

Name Stamp

COUNTERSIGNED

Name Stamp