PAKISTAN NAVY SPECIFICATION No. 03/2020
PROMULGATION DATE: 03 March 2021

BROAD BELT FOR DRESS NO 4, PAK MARINES & SSG (N)

Prepared by:

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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

1. 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.

CONTENTS

RECORD OF CHANGES /AMENDMENT

Amd No	Date	Letter of amendment and description	Signature and Date

0101. DESIGNATION

1. Broad Belts (Black & Olive green) for Dress No 4, Pak Marines & SSG (N).

0102. USAGE

2. Broad Belts (Black and Olive Green) are used by PN Officers/ CPOs and Sailors of General Service, Pak Marines & SSG (N).

0103. INTRODUCTION

1. This specification is promulgated by Directorate of Indigenous Technical Development. Naval Headquarters 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 Directorate. However, it cannot be implemented without prior approval of DITD. This specification supersedes and replace PN Specification No 12/2001 dated 21 Oct 01 for Belt Jet Black for Pak Navy Marines and 01/2001 dated 06 June 01 for Belt Green Nylon for SSG (N). All other specifications promulgated earlier in relation to the items mentioned herein. These samples are based on sample approved by Dress Committee.

2. This specification includes **07** Annexes and consists **26** pages, including the cover.

0104. SCOPE

1. This specification covers manufacturing/ inspection requirements of Broad Belts for Dress NO 4, Pak Marines & SSG (N). This specification lays down the standards to which the store shown under designation above should conform to. It defines and lays down the quality, standards and details of materials, manufacturing, workmanship and finish. It also lays down the details of testing, inspection, rejection, marking, packing and delivery, etc.

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-20A	Fiber analysis Quantitative
b.	ASTM D-3776	Test method for Mass per unit Area

c.	ASTM D 5430-07	Test method for Visually inspecting and grading fabrics
d.	BS 1006 1-8	Colour fastness to light
e.	DIN 53752	Determination of Coefficient of linear thermal expansion
f.	DIN 52612	Testing of thermal insulation material
g.	IEC-216	Determination of thermal endurance properties.
h.	IEC 60695 -11-10	Flammability Classification
j.	IEC 60093	Determination for volume resistivity and surface resistivity of solid insulating materials
k.	IEC 60112	Determination of relative resistance of solid electrical insulating materials
l.	IEC 60250	Determination of the permittivity and di electric dissipation factor of electrical insulating material.
m.	ISO-7211/2	Determination of number of Threads per unit Length
n.	ISO-7211/5	Determination of linear density of yarn removed from
p.	ISO-105-C10	Colour fastness to Washing
q.	ISO-105-E02	Colour fastness to Seawater test
r.	ISO-105-X12	Colour fastness to Rubbing test
s.	ISO-105-E03	Colour fastness to Chlorinated water
t.	ISO-105-E04	Colour fastness to Perspiration
u.	ISO-105-J03	Calculation of Colour Difference
v.	ISO-3801	Determination of Mass per unit Length and Mass per unit
w.	ISO 2061	Determination of Twist in yarn (Direct Counting Method)
x.	ISO-3071	Determination of pH of Aqueous Extract
y.	ISO 2859-1	Sampling Procedure for Inspection by attributes
z.	ISO 1043	Terms and definition
aa.	ISO 1183	Density of non-cellular plastics material
ab.	ISO 307	Viscosity of polymeric material
ac.	ISO 2577	Thermosetting molding materials
ad.	ISO 62	Plastics – determination of water absorption
ae.	ISO 3146	Melting temperature of polymeric material
af.	ISO 1133	Plastics- determination of melt mass flow rate
ag.	ISO 527-2	Determination of tensile properties
ah.	ISO 75-1/2	Determination of temperature of deflection under load
aj.	ISO 899-1	Determination of creep behavior
ak.	ISO 178	Determination of flexural properties
al.	ISO- 179	Determination of charpy Impact
am.	ISO- 180 /A1	Determination of Izod impact
an.	ISO 2039-1	Determination of hardness
ap.	MILSpecA-A-512613	Velcro Tape Quality Parameters
aq.	MIL STD 105	Sampling Procedure and Table for Inspection by Attributes.

0106. TERMS & DEFINITIONS

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

0107. TECHNICAL DETAILS OF BROAD

1. The Technical Details of Broad Belts for Dress No 4, Pak Marines & SSG (N) are mentioned at Annex B of this specification.

0108. SCHEDULE OF MEASUREMENT

1. All measurement schedule of Broad Belts for Dress No 4, Pak Marines & SSG (N) are given at Annex C.

0109. DRAWINGS

1. All dimension of drawing is given at Annex D

0110. INSTRUCTIONS FOR BROAD BELT FOR DRESS NO 4, PAK MARINES & SSG (N) MANUFACTURING

1. The Broad Belt shall be manufactured from the specified polymeric Material/minimum of 100% polymeric material to the shape and design of the sealed pattern/sample or as shown in the separate drawing.

2. The Broad Belt shall conform to the Technical detail and Measurements are given in Annexure 'B and C' respectively, attached to this specification.

3. The Broad Belt and its accessories shall be properly dyed and shade should conform to Pantone Shade.

4. Broad Belt shall be filled with same material that is polymeric. Same will be dyed properly with relevant dyes and should confirm to Pantone Shade.

5. Velcro Tape, shall be fixed properly to Belt. Buckle Plastic male/Female should confirm parameters of Mil/Spec and also conforming drawing.

6. Broad Belt shall be clearly cut and the raw edges shall be neatly trimmed/fused.

7. Finished product of Broad Belts for DRESS NO 4, Pak Marines & SSG (N) will be as per Annex B, C & D of this Specification.

8. Strict AQL standard shall be implemented for Internal Audit/ Inspection of finished product.

9. Parameter define at Annex B for material of buckle should be complied by manufacturer / supplier and assured through any accredited lab in Pakistan. Same will be asked by Inspecting Officer, as deemed appropriate.

10. Dyes used for dyeing purpose of the Broad Belt (narrow width fabric) and Nonmetallic Buckle are not harmful for human health.

11. Broad Belt and its accessories should not be manufactured from recycled polymers.

12. A label size 80 x 57 mm shall be pasted/stitched with Belt.

a. Face Side: Care Instruction
b. Back: Identification Label

0111. QUALITY OF WORKMANSHIP AND FINISHING

1. Workmanship and finish of the Broad Belts for Dress No 4, Pak Marines & SSG (N) shall be equal to the reference/approved sample/ sealed pattern. It shall be the best of its class and to the entire satisfaction of the INS. The Broad Belts for Dress No 4, Pak Marines & SSG (N) shall confirm the parameters define at Annex B of this specification. All properties and qualities which may not be defined in this specification i.e. feel /finish etc. should be as per reference/sealed /approved sample. Sealed approved sample is obtained from DNS/ PNCSD and held with DNS /PNCSD/ CINS, for future references /inspections/ stocking sample etc.

0112. TESTING

1. The material shall be subjected to tests laid down in this specification at Annex B of this specification and related documents. 10 x Broad Belts for Dress No 4, Pak Marines & SSG (N) along with accessories for manufacturing of Broad Belts for Dress No 4, Pak Marines & SSG (N) will be required to complete all the 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 any B/R samples tested from any reputable Laboratory other than PN. However, any test considered important by inspecting Authority other than Annex B. e.g. Twist /2.5cm of Thread, Shear strength, Peel strength of Velcro w.r.t Mil- Spec, etc. Or the test laid down in Annex B i.e. test of Buckle, may also be conducted in order to check its suitability/ quality. Firm is liable to pay all the testing charges.

0113. DRAWING OF BROAD BELT SAMPLES FROM LOTS/BATCHES

1. No of samples drawn from bulk quantity for inspection/ testing are as per instruction of Inspecting Officer or 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

0114. TENDER SAMPLE /ADVANCE

1. Advance sample or pre-production sample, when required, shall be submitted in accordance with terms of the contract for inspection and testing as per Annex B, C and D and approved by CINS. The minimum quantities required are 10 Broad Belts of Black & Green (each) along with accessories used in manufacturing of Broad Belts for Dress No 4, Pak Marines & SSG (N) for inspection as mentioned above.

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 Broad Belts for Dress No 4, Pak Marines & SSG (N) along with accessories used in the manufacturing of the Belt.

3. The approval of the sample, authorizes the commencement of bulk production but does not relieve the suppliers/ manufactures from compliance with all the provisions of this specification. Approved samples after rectification of all observations highlighted by Inspecting Authority 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 facilities which will be used for manufacturing 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.

6. Material required for advance sample or tender sample are as follows:

a.	Broad Belt for Dress No 4 & SSG (N)	10 x No of each size
b.	Sewing thread military olive & Black	01 Tube/ Bobbin each
c.	Buckle plastic components	05 Nos of each size
d.	Webbing Thin	500 Mtrs each
e.	Velcro Tape	5 Mtrs each
f.	Carton Card Board	05 Nos

g.	Polythene Bag	10 Nos.
h.	Adhesive Tape 10 cm wide	20 Mtrs.

0115. INSPECTION

1. Inspection/ acceptance is to be carried out to the entire satisfaction of Chief Inspector of Naval Stores and also as per instruction/ procedure laid down in Inspection Instruction/Unit Instruction of Inspecting Authority.

2. Common defects and Acceptance Quality level (AQL) for Broad Belt are enclosed as Annex E, & F respectively for consultation/ guideline. However these guide lines may be considered by inspecting officer in addition to unit instruction and inspection instruction of CINS.

3. The Broad Belts for Dress No 4, Pak Marines & SSG (N) shall be examined for the correctness of material, shape, design, dimension, size, workmanship and finish.

4. 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 the parameters laid down in this specification or the quality of product does not seems up to the mark.

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 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).

8. Replacement by the Contractor. The supplier/ manufacturer is responsible for replacement of the consignment or any part there of whenever it is found to be not conforming to this specification or does not curtain its quality till the useful life of an item. The supplies so tendered in replacement, shall be subjected to testing/Inspection and acceptance by the Inspecting Officer.

9. 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.

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

0116. STAMPING OF ACCEPTED/ REJECTED STORES BY THE INSPECTOR.

1. While stamping of accepted/ rejected stores following instructions are to be followed:

a. Stamping of Accepted Stores. Each acceptable Broad Belts for Dress No 4, Pak Marines & SSG (N) shall be stamped with Inspector's Individual Acceptance Mark or as per Instructing of Inspecting Authority. The stamping shall be legible.

b. Stamping of Rejected Stores. The rejected Broad Belt for Dress No 4, Pak Marines & SSG (N) shall be marked with Inspector's Rejection Mark at the back/ visible place of Broad Belt for Dress NO 4, Pak Marines & SSG (N) to avoid re-submission by the supplier.

0117. SPECIAL INSTRUCTIONS

1. Care Instructions Care instructions in English and Urdu shall be attached with each Broad Belt for Dress No 4, Pak Marines & SSG (N) as indicated in the drawing and have minimum requirement as follows:

a. Washing procedure.
b. Drying procedure.
c. Any Prohibition / chlorinated water.

0118. PACKING AND PRESERVATION DETAILS

1. The store when ordered to be delivered 'PACKED' shall be packed as per following instructions or as per satisfaction of Inspecting Officer:

2. Each Broad Belt for Dress No 4, Pak Marines & SSG (N) shall be properly folded length wise.

a. The Broad Belt for Dress No 4, Pak Marines & SSG (N) shall be packed in a neat, dry and clean condition in polyethylene bag of suitable size.

b. 60 Broad Belt for Dress No 4, Pak Marines & SSG (N) shall be further packed in a thick Boxboard/Flouring/ cartoon of 05 ply.

c. Each Box Board packing shall be securely / properly packed with 10mm wide adhesive tape.

d. Each box board shall consist of same size of Broad Belt.

e. Stowage/ stacking details.

0119. IDENTIFICATION LABEL

1. Each Broad Belt for Dress No 4, Pak Marines & SSG (N) shall bear following minimum information attached with Broad Belt for Dress No 4, Pak Marines & SSG (N):

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

0120. PACKING LIST

1. Firm is bound to provide a packing list of store offered for inspection along with the challan and each packed box giving full, which include complete details about the store i.e. Pattern No., Description of Store, size, quantity, Contract No, & date, challan No & date, I/Note No. or Voucher No. with date, Consignee, Firm's Name, Date of packing, Packer's Signature and Stowage/ Stacking Instruction.

0121. MARKING OF STORES

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) 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.

0122 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.

xxxxxx Sd xxxxxx

BURHAN AHMAD
Captain Pakistan Navy
DID

Annexes:

ANNEX A TO
PN SPECIFICATION NO.03/2020
PROMULGATION DATE 03 MAR 21

TERMS & DEFINITIONS

1. **CINS:** Chief Inspector of Naval Stores

2. **DITD :** Directorate of Indigenous Technical Development

3. **DNS:** Directorate of Naval Store.

4. **SSG (N):** Special Service Group (Navy)

5. **Inspector:** The term inspector shall include the "Inspection Authority", inspecting officer and their representatives, duly authorized for the purpose of discharging inspection duties involved.

6. **Inspection Authority:** Chief Inspector of Naval Stores (CINS). His verdict in respect of Sealed Inspection matters is to be taken as final.

7. **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.

8. **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.

9. **Minor Defects:** They are small insignificant issues that don't affect the function or form of the item. Highest tolerance of AQL has been set for minor defects.

10. **Major Defects:** They would likely result in product return but don't poses safety risk. AQL tolerance depend upon the description/ quality of finished product.

11. **Critical Defects:** They pose a threat to user safety. AQL tolerance for these type of defects are zero.

12. **HDTA:** Heat Deflection Temperature

ANNEX B TO
PN SPECIFICATION NO.03/2020
PROMULGATION DATE 03 MAR 21

TECHNICAL DETAILS OF BROAD BELT

S. No	Parameters	Specified Limits
1.	**Web Thick (for main belt)**	
a.	Material	100% Polypropylene
b.	Colour (1) Black (2) Military Olive	 Pantone No.19-4006 TPX Pantone No. 17-0620 TPX
c.	Nature of dye	Disperse /Fast To Dopes (Melt Dye)
d.	Weave	Ribbed Layered (1x2)
e.	Wt/ Linear Mtr	100 ± 10 gm
f.	Linear Density (1) Warp (2) Weft	 1200 ± 100 Den 900 ± 100 Den
g.	No. of Threads (1) Warp / full width (2) Weft / 25 mm	 350± 5 each multifilament 35 ± 2 each multifilament
j.	Thickness	3.5 ± 0.25 mm
k.	Direction of Twist	S
	Performance Criteria	
l.	B.S (30.48 cm BG x full Width)	1000 kg Min
m.	Washing – 3 (1) Change in Shade (2) Staining on Cotton	 GS 4 or better GS 4 or better
p.	Rubbing (1) Dry (2) Wet	 GS 4 or better GS 4 or better
q.	Light	GS 4 or better
r.	Perspiration (1) Acid (2) Alkali	 GS 4 or better GS 4 or better
s.	Sea water (1) Change in Shade (2) Staining	 GS 4 or better GS 4 or better
2.	**Web Thin**	
a.	Material	Polymer of olefin fiber
b.	Colour (1) Black (2) Military Olive	 Pantone No.19-4006 TPX Pantone No.17-0620 TPX
c.	Nature of dye	Dope Dye
d.	Weave	Two Layered
e.	Width	23.5 ± 1.0 mm

f.	Wt/ Linear Mtr	15 ± 1 gm
g.	Linear Density (1) Warp (2) Weft	 1200 ± 100 Den 475 ± 100 Den
h.	No of Thread (1) Warp (full width) (2) Weft (25 mm)	 70 ± 2 34 ± 1
j.	Thickness	1.3 ± 0.1 mm
	Performance Criteria	
k.	B.S (17.8 cm BG x Full Width)	100 Kg Min
l.	Washing - 3 (1) Change in Shade (2) Staining	 GS No 4 or better GS No 4 or better
m.	Rubbing (1) Dry (2) Wet	 GS No 4 or better GS No 4 or better
n.	Light	GS 4 or better
p.	Perspiration (1) Acid (2) Alkali	 GS 4 or better GS 4 or better
q.	Sea water (1) Change in Shade (2) Staining	 GS 4 or better GS 4 or better
3.	**Thread for stitching (Velcro & Label)**	
a.	Material	Nylon
b.	Construction	3 ply multifilament of matching shade
c.	No of stitches per 25 mm	7 to 8
4.	**Velcro**	
a.	Material (Male & Female)	Nylon
b.	Width	35 mm ± 1 mm
c.	Wt/ Linear Mtr	20g ± 3 g
d.	Performance / Quality (200 times at 300g) (1) Before sticking / un-sticking (2) After sticking / un-sticking	 Satisfactory Satisfactory
e.	Colour	Matched with color of broad belt
f.	Other parameters	As per MIL Spec A-A-5512613
g.	Washing Test No. 3 1) Change in shade 2) Staining (a) Cotton (b) Nylon	 GS No. 4 or better GS No. 4 or better GS No. 4 or better
j.	Size Details: (a) Length of side fixed loop (webbing Thin) (b) Length of Velcro	 160 mm ± 2 mm 35 mm ± 2 mm

5.	**Carton Card Board**	
a.	No of paper Plies	05
b.	Outer paper ply weight / m^2	180± 5 gm
c.	Inner paper ply weight /m^2	180± 5 gm
d.	Corrugated paper weight/m^2	120± 5 gm
e.	Paper pasted with corrugated sheet	120± 5 gm
f.	Gauge of stapler pin	22 SWG
g.	Thickness of pin	02 mm
h.	Size	60cm x 35cm x27 cm
6.	**Buckle**	
a.	Material (Plastic or equivalent)	Ultramid A3W (Polyamide 66)
b.	Failure load (on direct pull):	Greater than 150 Kg
c.	Abbreviated term	PA-66 (Poly Amide 66)
d.	Density	1130 Kg/m^2
e.	Viscosity number (0.5%in 96%H_2SO_4)	150 cm^3/g
f.	Colour natural	Black
g.	Water absorption, equilibrium in water at 23 °C	8.00 – 9.00 %
h.	Moisture absorption, equilibrium 23 °C 50% r.h.	2.50 – 3.10%
j.	**Processing**	
	(1) MELTING Temperature, DSC	260°C
	(2) MVR 275°C/5 Kg	100cm^3/10min
	(3) Melt temperature, injection molding	280-300°C
	(4) Molding / Extrusion temperature, injection molding	60-80°C
	(5) Molding Shrinkage, constrained	0.85%
	(6) Molding Shrinkage (a) Parallel (b) Normal	 1.38% 1.68%
k.	**Mechanical Properties**	
	(1) Tensile Modulus (a) Dry (b) Condition	 3000 M Pa 1100 M Pa
	(2) Yield Stress 50mm/Min (a) Dry (b) Condition	 85 M Pa 50 M Pa
	(3) Yield Strain 50 mm/min (a) Dry (b) Condition	 4.4% 20%
	(4) Flexural Modulus	2900 MPa
	(5) Charpy unnotched impact strength(23°C)	N/N
	(6) Charpy notched impact strength (23 °C) (a) Dry (b) Con	 6 K j /m^2 20 K j /m^2
	(7) Charpy notched impact strength(-30°C)	5.0 K j/m^2
	(8) Izod Notched impact strength 1A (a) 23 °C KJ/m^2 (b) - 30 °C	 5.5/N 6/N

	(9) Ball indentation Hardness (a) H-358/ 30 (b) H-961/30	 160 (Dry) 100 (Con)
l.	**Thermal properties**.	
	(1) Deflection Temperature 1.8 MPa (HDTA)	75°C
	(2) Deflection Temperature 0.45MPa(HDTB)	220 °C
	(3) Service temperature(short cycle operation)	200 °C Maximum
	(4) Temperature index at 50%loss of tensile strength after (a) 20000 h (b) 5000h	 121 °C 147 °C
	(5) Thermal coefficient of linear expansion longitudinal /transverse(23-80)° C	70-100 10 $^{-6}$/K
	(6) Thermal conductivity (DIN 52612-1)	0.33 W/(m K)
	(7) Specific Heat Capacity	1700 J/(kg K)
m.	**Electrical properties**	
	(1) Relative permittivity at 1MHz (IEC60250) (a) Dry (b) Condition	 3.2 5
	(2) Dissipation factor at 1 MHz(IEC 60250) (a) Dry (b) Condition	 250 10^{-4} 2000 10^{-4}
	(3) Volume resistivity(IEC 60093) (a) Dry (b) Condition	 1 E 13 1 E 9
	(4) Comparative tracking Index (CTI)test liquid A (IEC 60112)	500

ANNEX C TO
PN SPECIFICATION NO.03/2020
PROMULGATION DATE 03 MAR 21

Ref No. PN/DID/03/10127906 dated 20 August 2021

AMENDMENT IN PN SPECIFICATIO 03/2020

FOR:

PN SPECIFICATION (03/2020)				ANNEX C
HEADING AT ANNEX C: SCHEDULE OF MEASUREMENTS FOR BROAD BELT				
S NO	SIZE	MEASUREMENTS		TOLERANCE
		LENGTH	WIDTH	
1.	X-Large	158 cm	5.0 cm	± 0.5 cm
2.	Large	140 cm	5.0 cm	± 0.5 cm
3.	Medium	122 cm	5.0 cm	± 0.5 cm
4.	Small	105 cm	5.0 cm	± 0.5 cm

READ:

PN SPECIFICATION (03/2020)				ANNEX C
HEADING AT ANNEX C: SCHEDULE OF MEASUREMENTS FOR BROAD BELT				
S NO	SIZE	MEASUREMENTS		TOLERANCE
		LENGTH	WIDTH	
1.	X-Large	158 cm	5.7 cm	± 0.5 cm
2.	Large	140 cm	5.7 cm	± 0.5 cm
3.	Medium	122 cm	5.7 cm	± 0.5 cm
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ANNEX C TO
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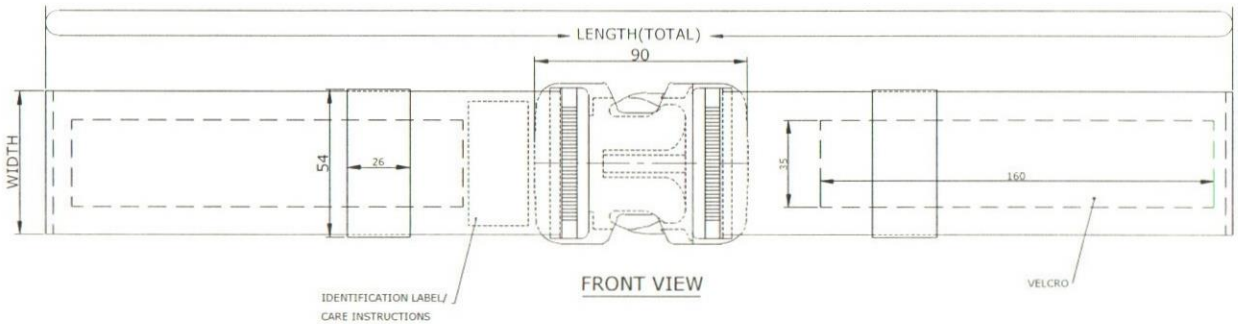
SCHEDULE OF MEASUREMENTS FOR BROAD BELT

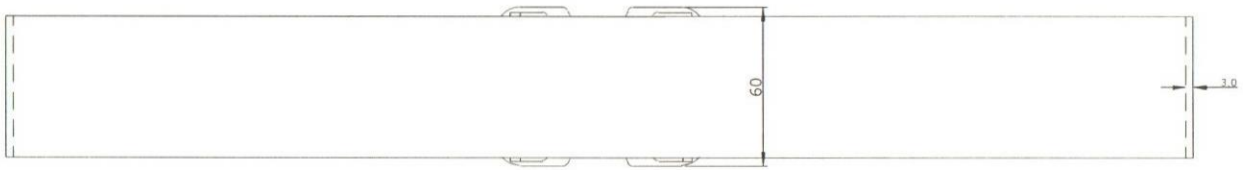
S.NO	SIZE	MEASUREMENTS		Tolerance
		Length	Width	
1.	X-Large	158	5.0	± 0.5 cm
2.	Large	140	5.0	± 0.5 cm
3.	Medium	122	5.0	± 0.5 cm
4.	Small	105	5.0	± 0.5 cm

Note: All Measurements size in cm

ANNEX "D" TO
PN SPECIFICATION NO. 03/2020
PROMULGATION DATE .03 MAR 2021

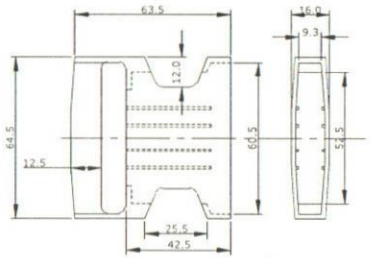


FRONT VIEW

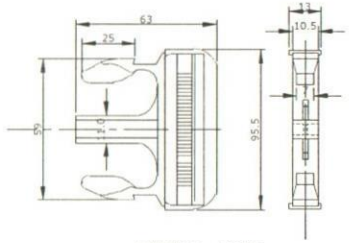


BACK VIEW

LOOP

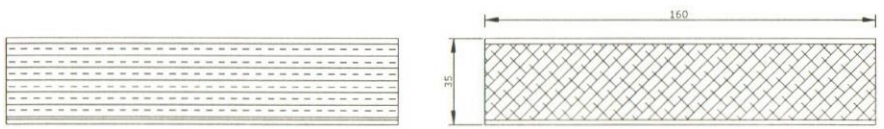


BUCKLE FEMALE



BUCKLE MALE

1302



VELCRO

NOTE:
FOR FURTHER DETAILS SEE STOCK/APPROVED SAMPLE

DITD KARACHI		
TITLE: BROAD BELT BLACK & OLIVE GREEN		
DWG.NO. TD-2495/2019	DIMENSIONS: mm	
DATE: 24-12-2020	SCALE: NTS	
DRAWN BY --sd-- HDM M.ASGHAR I/c DWG	CHECKED BY --sd-- LT SANA KANWAL SO, TEXTILE	APPROVED BY --sd-- CAPTAIN BURHAN AHMAD DITD

ANNEX E TO
PN SPECIFICATION NO 03/2020
PROMULGATION DATE 3 March 2021

COMMON DEFECTS IN BROAD BELT NARROW WIDTH FABRIC

S. No	Defects	Possible Cause	Type of Defects Major/Minor
1.	Slub Yarn: a yarn which is thicker than the desired count or has a thick place in it.	• Due to hand joint in roving or rejoining of yarn in ring spinning.	If it occurs frequently and larger in size then its major defect.
2.	Holes in fabric	• Weak place in yarn which could have resulted in breakage.	If it occurs frequently and larger in size then its major defect.
3.	Puckered and discolored band.	• Insertion of weft with different shrinkages and colour change characteristics due to further treatment.	Major defect as it foils product appearance.
4.	Broken and missing pick	• Yarn broken or plucked out.	Major when it is at prominent place.
5.	Loop in Yarn	• Due to slack end, the warp might get pulled and form loop in the construction of the fabric.	Minor if does not foil the appearance.
6.	Warp /Weft Float: yarn lie on another yarn in the form of loose yarn.	• Series of yarn stuck in their bottom position resulting yarns not lifted during insertion.	If it occurs frequently and larger in size then its major defect.
7.	Loose construction	• Several slacks ends in warp can lead to loose construction.	It leaves space in construction and decrease strength of product.
8.	Double pick / ends; two yarns mistakenly inserted instead of one.	• The yarn is not transferred successfully to the receiving end.	Major defect as it appears throughout the width or length of fabric/product.
9.	Skewed fabric: The shape of the fabric is distorted. Wales and courses are angular.	• This can be a result of uneven take down roller setting. It is a generic feature of circular knits because of the spiral movement of the needles.	Within allowable limit then minor otherwise major.
10.	Foreign Fly between loops of constructed fabric	• Unclean environment or improper maintenance of machine can cause fly to end up in the	Major if it is visible.

		knitting zone where it becomes part of the fabric.	
11.	Thin Yarn/ Thick yarn	• One of the feeder is receiving yarn from a spool that has finer yarn or coarser yarn.	Major
12.	Stain of oil, food, drink, ink etc.	• This occur due to spill of oil, ink, food, drinks on the garment.	If it is easily washable then minor.
13.	Seam puckering: gathering of a seam either just after sewing or after laundering.	• Due to uneven stitching on to plies of fabric, improper thread tension, wrong sewing thread etc.	Minor when it is not visible
14.	Open Seam or broke seam: Portion of garment that has not been covered by sewing thread.	• Due to improper handling of the part/ piece of fabric, improper setting and timing between needle and looped or rook etc.	Major
15.	Broken Stitch: Non continuous Sewing thread	• Due to improper timing or machine usage.	Minor
16.	Drop stitched/ skipped Stitched Irregular stitching along the seam	• It appears due to improper handling of cut pieces or machine usage.	Minor
		• Quality parameters has not been as certain by QC department.	Major
		• Due to miss alignment of word template machine or man.	Major

ANNEX F TO
PN SPECIFICATION NO 03/2020
PROMULGATION DATE 3 March 21

ACCEPTABLE QUALITY LEVELS (AQL)

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 / garment by the QC professionals. AQL standard is depend on the quality of the product to be inspected, random sampling, and experience of inspector. Normally lower figure AQL standard e.g. 01% is used for high quality products/ narrow width fabric and high figure AQL standard e.g. 10% for low quality product/ garment. AQL standard 2.5% means that allowable limit of defective item is 2.5 % of total items inspected .Usually AQL 2.5% is used for major defects, AQL 4.0 % is used for minor defects and AQL 6.5% is used for slight defects, however zero acceptance for critical defects Allowable limit of Major defects are less than minor defects and it depends upon nature of item /offered store. It can be less than 01% or greater than 10%. .Following AQL table is used to determine lot size/ offered store quantity, least No. of sample to be inspected, AQL %, and acceptance & rejection points:

SINGLE SAMPLING PLAN FOR NORMAL INSPECTION OR AS PER ORDER OF INSPECTING OFFICER.											
Lot size	Least No. of sample to be Inspected	Allowable Quality levels(AQL) % • Acceptable/ Allowable defective sample (Ac) • Rejected /Exceed allowable limit of defective item (Re)									
		1.5%		2.5%		04%		6.5%		10%	
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re
281-500	20-80	1-3	2-4	1-5	2-6	2-7	3-8	3-10	4-11	5-14	6-15
501-1200	32-125	1-5	2-6	2-7	3-8	3-10	4-11	5-14	6-15	7-21	8-22
1201-3200	50-200	2-7	3-8	3-10	4-11	5-14	6-15	7-21	8-22	10-21	11-22
3201-10000	80-315	3-10	4-11	5-14	6-15	7-21	8-22	10-21	11-22	14-21	15-22
10001-35000	125-500	5-14	6-15	7-21	8-22	10-21	11-22	14-21	15-22	21	22
35001-150000	200-800	7-21	8-22	10-21	11-22	14-21	15-22	21	22	21	22
150001-500000	315-1250	10-21	11-22	14-21	15-22	21	22	21	22	21	22
500001-above	500-2000	14-21	15-22	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 5 minutes to check the item , the quantity to be inspected is 2,500 items

then it took 208 hours to check the whole consignment/ offered store.it means 26 days approx. for one store. Calculation is as follows:

$$\frac{5\ \text{min} \times 1\ hr}{1\ item\ \times 60\ min} \times 2{,}500\ items = 208.33\ hrs \cong 26\ days$$

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

$$\frac{5\ \text{min} \times 1\ hr}{1\ item\ \times 60\ min} \times 2{,}00\ items = 16.66\ hrs \cong 02\ days$$

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 03/2020
PROMULGATION DATE 3 March 21

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

Blank Page