

PRIVATE SPECIFICATION

Prepared for the



SOUTH AFRICAN AIRWAYS

A STAR ALLIANCE MEMBER 

**EPAULETTES, FLIGHT DECK CREW, TRAVELLING
TECHNICIANS AND LOAD MASTERS**



**Item Numbers: CO103, CO104, CO105, CO106, CO111,
CO126, CO140, CO141**

Document Number: SAA 012

Version 04.0/August 2015

1. Scope

This specification¹ covers the material, cut and make of epaulettes for personnel of the South African Airways. The epaulette variations covered in this specification are as given in table 1.

Table 1 – Epaulette variations

Type		Item Number
1	<i>Flight Deck Crew</i>	
1.1	FDC, Captain, 4-Bar	CO103
1.2	FDC, Senior First Officer, 3-Bar	CO104
1.3	FDC, First Officer (ATPL), 2.5-Bar	CO105
1.4	FDC, First Officer, 2-Bar	CO106
2	<i>Travelling Technicians</i>	
2.1	TT, Team Leader, 4-Bar	CO111-4
2.2	TT, Senior Line Station Technician, 3-Bar	CO111-3
2.3	TT, Certified Technician, 2-Bar	CO111-2
2.4	TT, Certified Technician, 1-Bar	CO111-1
2.5	TT, Uncertified Technician, Purple Bar	CO140
3	<i>Load Master</i>	
3.1	LM, Team Leader, 2-Bar	CO126
3.2	LM, Load Controller, 1-Bar	CO141

2. Definitions

For the purpose of this specification the following shall apply:

acceptable: acceptable to the South African Airways

nominal: subject to the tolerances normal to good manufacturing practice

pair of epaulettes: two epaulettes bearing the same insignia for wearing on left and right shoulders respectively

SANS: South African National Standard

3. Style





- ♦ body of all epaulettes to be made from the same fabric
- ♦ to be decorated with Gold Mylar Naval Lace and in certain cases it shall be machine embroidered, depending on the type
- ♦ to be supplied in pairs

¹ This private specification has been compiled by National Private Specifications (Pty) Ltd. privatespecs@vodamail.co.za

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4. Design variations

Table 2 – Item variations: Flight Deck Crew

1 Item Number	2 Rank	3 Illustration	4 Dimensions and positioning of bars
CO103	FDC, Captain, 4-Bar		See section 9.1
CO104	FDC, Senior First Officer, 3-Bar		See section 9.2
CO105	FDC, First Officer (ATPL), 2.5-Bar		See section 9.3
CO106	FDC, First Officer, 2-Bar		See section 9.4



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Table 3 – Item variations: Travelling Technicians

1	2	3	4
Item Number	Rank	Illustration	Dimensions and positioning of bars
CO111-4	TT, Team Leader, 4-Bar		See section 10.1
CO111-3	TT, Senior Line Station Technician, 3-Bar		See section 10.2
CO111-2	TT, Certified Technician, 2-Bar		See section 10.3
CO111-1	TT, Certified Technician, 1-Bar		See section 10.4
CO140	TT, Uncertified Technician, Purple Bar		See section 10.5

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Table 4 – Item variations: Load Master

1 Item Number	3 Rank	4 Illustration	5 Dimensions and positioning of bars
CO126	LM, Team Leader, 2-Bar		See section 11.1
CO141	LM, Load Controller, 1-Bar		See section 11.2

5. Client furnished materials

No materials will be supplied by the South African Airways.

6. Component materials

The following materials shall be supplied and used by the manufacturer. Trim charts shall also be submitted by the manufacturer (see Annex A).

NOTE: All components listed below shall be manufactured in the Republic of South Africa. In instances where the raw material and/or finished components are not available in the Republic of South Africa, the onus shall be on the bidder to apply for exemption certificates from DTI. Exemption certificates, where relevant, shall be submitted together with each bid.

6.1 Outer material

- ♦ to comply with the requirements as given in table 5
- ♦ colour to be a match, in terms of SANS 10076-5, "The assessment of defects in textile piece-goods and made-up articles Part 5: Defects in woven woollen and worsted piece-goods", to Colour No. 543c-2007 "SAA Navy suiting" of CKS 129 "Colours for textiles"

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Table 5 – Outer material requirements

1	2	3
Property	Requirement	SANS standard unless otherwise specified
Composition	All wool	AATCC method 20
Weave	2/1 Z twill	Visual examination
Mass per unit area, g/m², min.	210	79
Number of threads per centimetre ^a		7211-2
Warp, min.	24	
Weft ^b	24	
Breaking strength, N.		13934-1
Warp, min.....	400	
Weft ^b	334	
Resistance to pilling, rating, min.		6116
After dry-cleaning	4	
Dimensional changes after dry-cleaning, % max. ...		ISO 3175-2
Warp and weft	2	
Non-fibrous material content, %, max.	2,5	5113
Colour fastness to:		
Light , rating, min.	6	105-B02
Dry-cleaning , rating, min.		105-D01
Colour change	4	
Staining	4	
Perspiration , rating, min.		105-E04
Colour change	4	
Staining	4	
Abrasion resistance, no. of rubs to end point, min	30 000	6009
Mothproofing	Mothproof ^c	5580 and 5582
^a Recommended mean wool fabric diameter: 22µm.		
^b Subject to a tolerance of –10 %.		
^c In terms of SANS 979.		

6.2 Interlining

- ◆ an acceptable fusible woven or non-woven interlining
- ◆ to comply with the requirements of CKS 627 “Fusible interlinings”
- ◆ mass per area to be such that the interlining is suitable for the purpose for which it is used
- ◆ capable of withstanding dry-cleaning

The selection of interlining of appropriate mass per area to be determined by consultation with the supplier of the interlining. The epaulette manufacturer will be held responsible for the performance of the interlining.

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6.3 Gold Mylar Lace

NOTE: This component is only applicable to epaulettes for the Flight Deck Crew.

- ♦ to comply with the quality and design as identified by the following trade description: Lace Gold Mylar 2-guts thread
- ♦ to be supplied in two widths, i.e. 6 mm and 12 mm
- ♦ colourfastness requirement to dry-cleaning and light to comply with those specified for the outer material
- ♦ colour to be an acceptable match to colour No. 974c-2015 “SAA Gold Braid (Cap & Epaulette)” of CKS 129 “Colours for textiles”



Figure 1 - Gold mylar lace

6.4 Petersham ribbon

NOTE: This component is only applicable to epaulettes for the Flight Deck Crew.

- ♦ an acceptable polyester Petersham ribbon
- ♦ width to be such as to render a finished epaulette as given in section
- ♦ colour to be an acceptable black

6.5 Embroidery thread

NOTE: This component is only applicable to epaulettes for Travelling Technicians and Load Masters.

6.5.1 Travelling Technicians

- ♦ plain colour thread: 100% Viscose machine embroidery thread that shall be of an acceptable purple colour as agreed upon between SAA and the successful bidder
- ♦ gold: an acceptable gold Lurex embroidery thread as agreed upon between SAA and the successful bidder
- ♦ colourfastness requirement to dry-cleaning and light to comply with the requirements as specified for the outer material

6.5.2 Load Masters

- ♦ plain colour thread: 100% Viscose machine embroidery thread that shall be of an acceptable blue colour as agreed upon between SAA and the successful bidder
- ♦ gold: an acceptable gold Lurex embroidery thread as agreed upon between SAA and the successful bidder
- ♦ colourfastness requirement to dry-cleaning and light to comply with the requirements as specified for the outer material

6.6 Sewing thread

- ♦ to comply with the requirements of SANS 1362 “Sewing threads”
- ♦ polyester and cotton core-spun or staple polyester thread
- ♦ ticket No. 80
- ♦ colour to be an acceptable match to the colour with which it is used

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7. Workmanship

The epaulettes shall be:

- ♦ cut and made with first-class workmanship throughout
- ♦ of uniform and acceptable make, colour and finish

Shall be free from:

- ♦ defects, that affect their appearance or may affect their serviceability (or both)
- ♦ marks, spots or stains incurred in the making-up

Seams and stitches shall be:

- ♦ smooth and uniform
- ♦ free from twists, pleats and puckers
- ♦ sufficiently extensible to avoid seam cracking and undue shrinkage in use

Ends of sewing shall be:

- ♦ trimmed and loose threads removed
- ♦ back-tacked if unsecured

8. Make

8.1 Construction of epaulettes

- ♦ be constructed from a single layer of outer material
- ♦ be fully interlined with interlining
- ♦ all raw edges shall be overlocked
- ♦ to be fitted with rank decorations as given in 8.2
- ♦ closing seam shall be centrally positioned on the underside of each epaulette
 - closing seam shall be pressed open
- ♦ shall form a tubular sleeve
- ♦ respective narrow and wide ends to be folded in 10 mm and sewn down 2 mm from the turned in edges

8.2 Rank decorations

8.2.1 Flight Deck Crew

8.2.1.1 General

- ♦ to be fitted with Gold Mylar Lace (see 6.3) and Petersham ribbon (6.4)
- ♦ the Gold Mylar Lace shall overlap the Petersham ribbon appropriately
- ♦ attached to the body of the epaulettes by means of 2 mm edge-stitchings along all edges

8.2.1.2 Captain

- ♦ design and dimensions to be as given in section 9.1

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8.2.1.3 Senior First Officer

- ♦ design and dimensions to be as given in section 9.2

8.2.1.4 First Officer (ATPL)

- ♦ design and dimensions to be as given in section 9.3

8.2.1.5 First Officer

- ♦ design and dimensions to be as given in section 9.4

8.2.2 Travelling Technicians

8.2.2.1 General

- ♦ to be machine embroidered with embroidery thread (see 6.5.1)
- ♦ the stitches shall be dense and laid closely together

8.2.2.2 Team Leader

- ♦ design and dimensions to be as given in section 10.1

8.2.2.3 Senior Line Station Technician

- ♦ design and dimensions to be as given in section 10.2

8.2.2.4 Certified Technician

- ♦ design and dimensions to be as given in section 10.3

8.2.2.5 Certified Technician (1-Bar)

- ♦ design and dimensions to be as given in section 10.4

8.2.2.6 Uncertified Technician (Purple bar)

- ♦ design and dimensions to be as given in section 10.5

8.2.3 Load Master

8.2.3.1 General

- ♦ to be machine embroidered with embroidery thread (see 6.5.2)

8.2.3.2 Team Leader

- ♦ design and dimensions to be as given in section 11.1

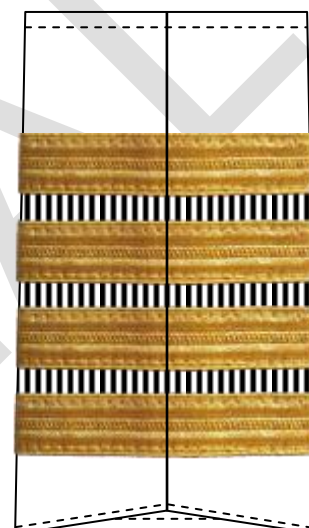
8.2.3.3 Load Controller

- ♦ design and dimensions to be as given in section 11.2

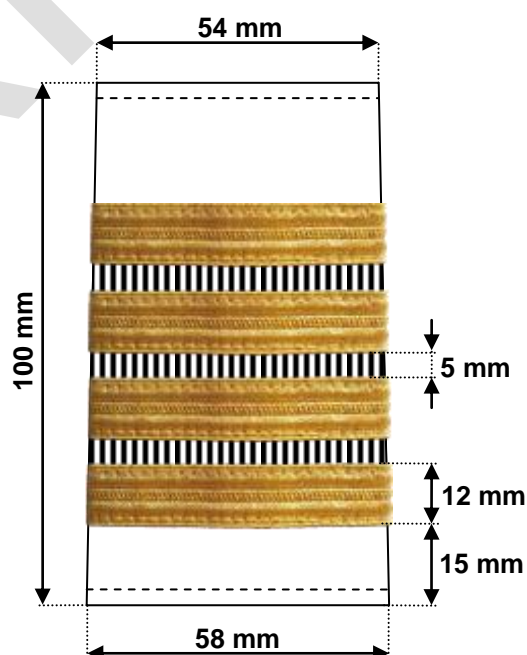
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9. Flight Deck Crew Epaulette variations

9.1 Captain, 4-Bar

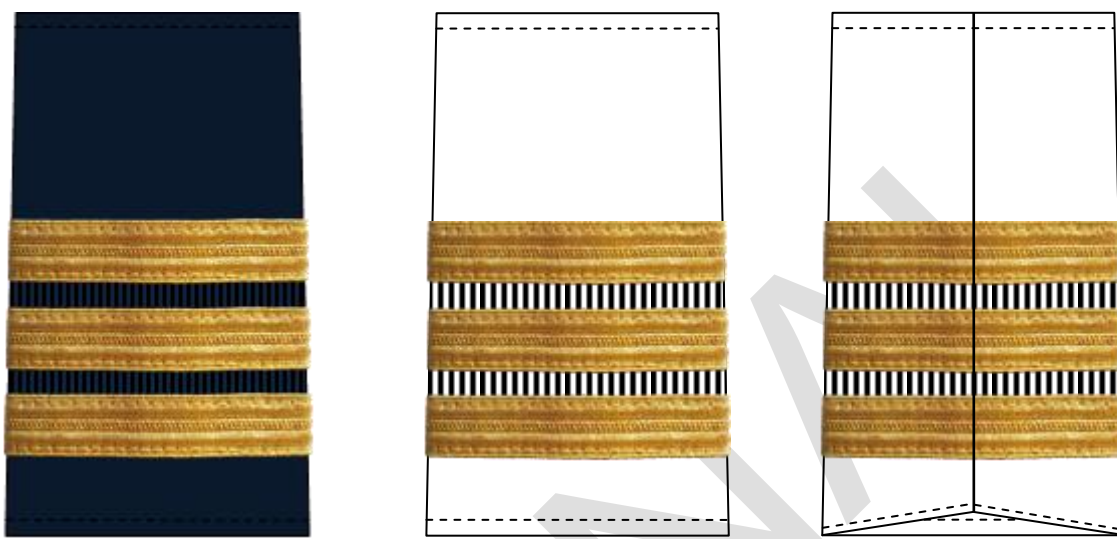


Petersham ribbon

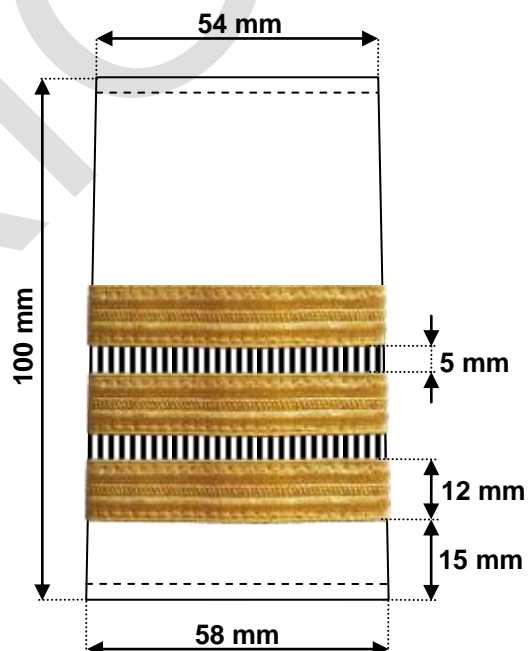


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9.2 Senior first Officer, 3-Bar

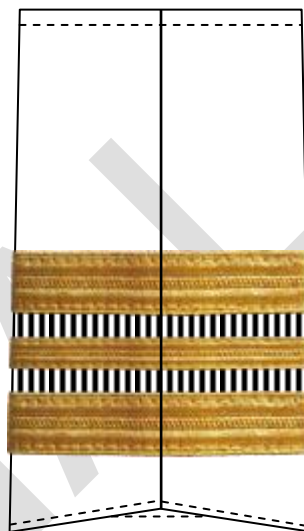


Petersham ribbon

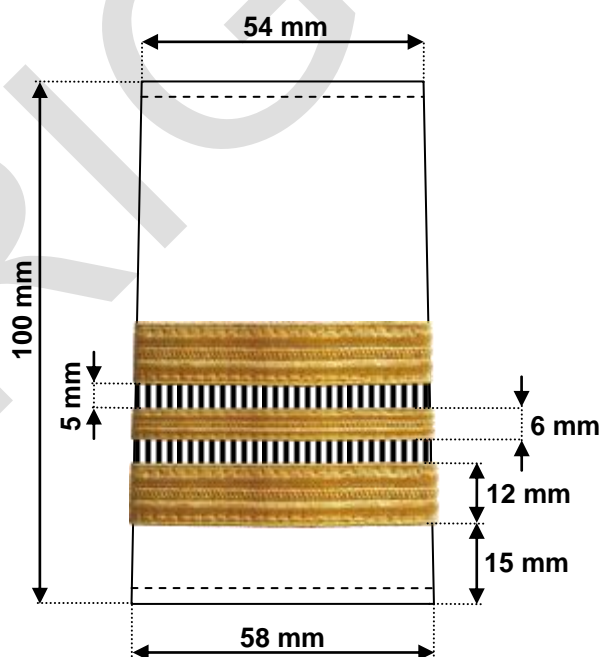


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9.3 First Officer (ATPL), 2.5-Bar

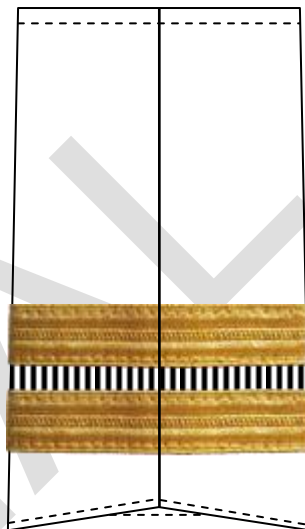


Petersham ribbon

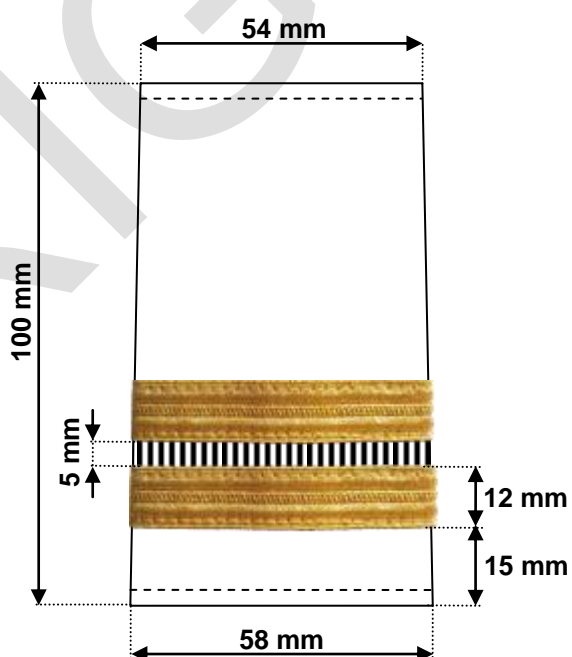


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9.4 First Officer, 2-Bar



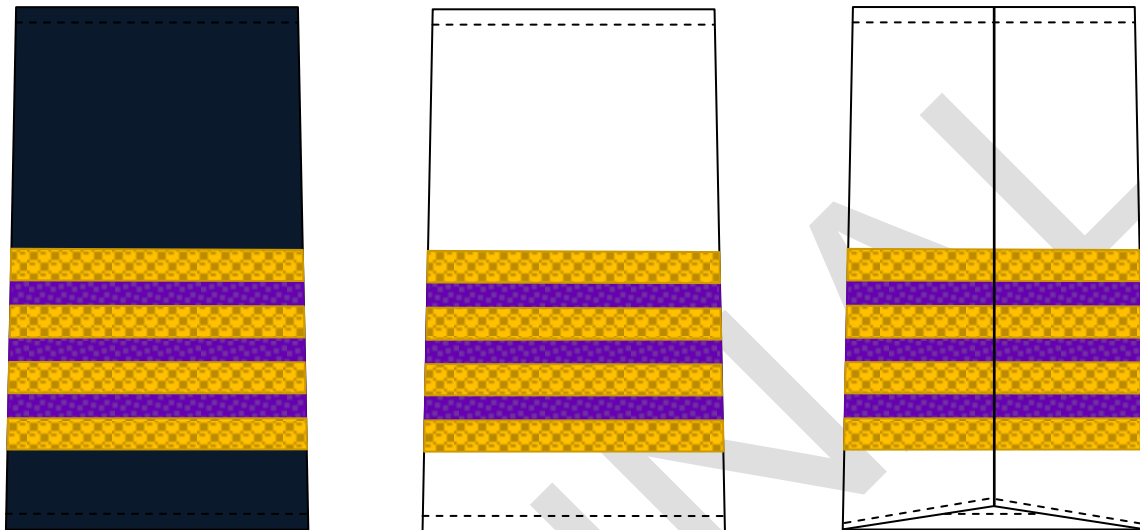
Petersham ribbon



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10. Travelling Technicians variations

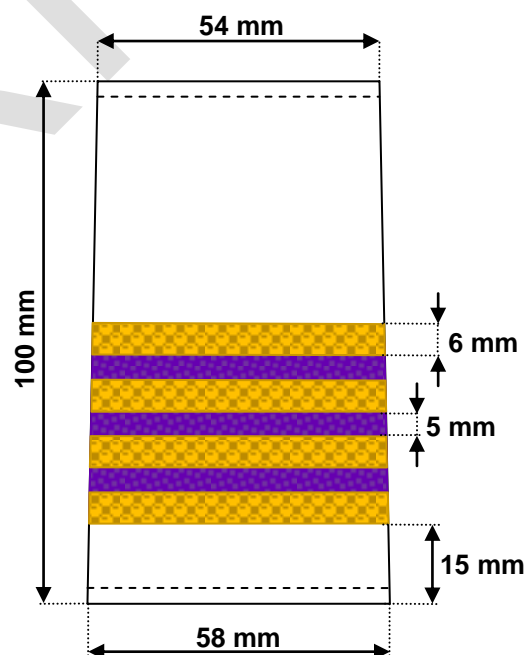
10.1 Team Leader, 4-Bar



Gold Lurex embroidery thread

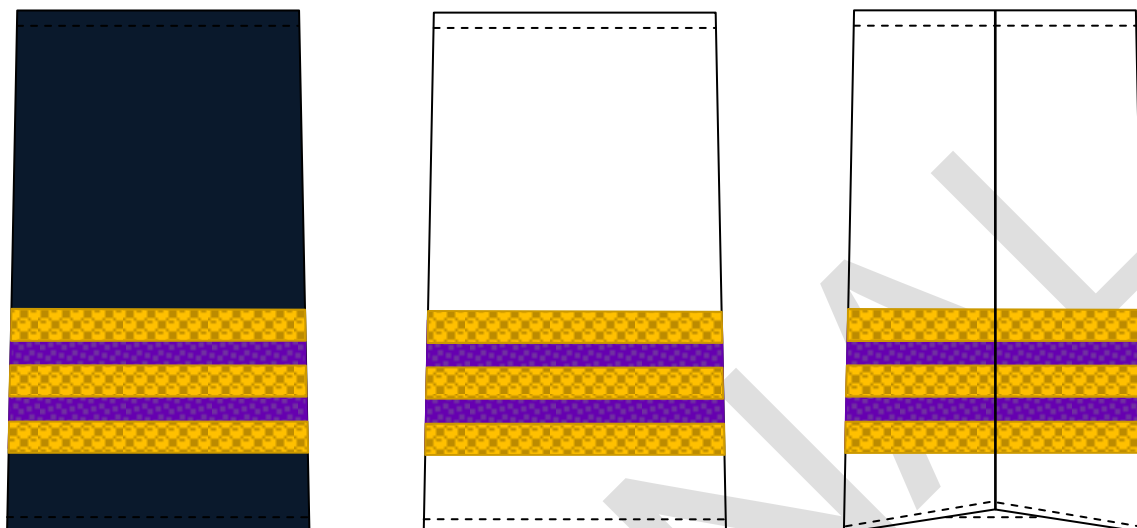


Purple 100% Viscose embroidery thread



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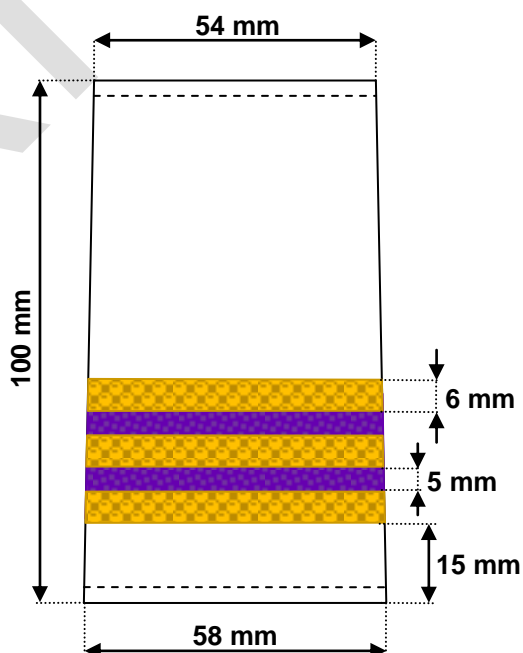
10.2 Senior Line Station Technician, 3-Bar



Gold Lurex embroidery thread

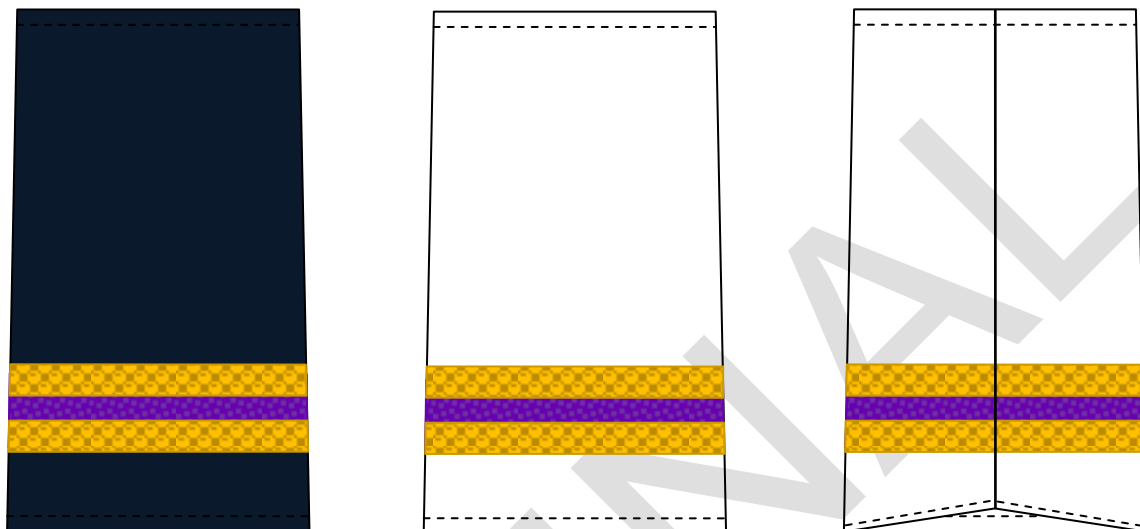


Purple 100% Viscose embroidery thread



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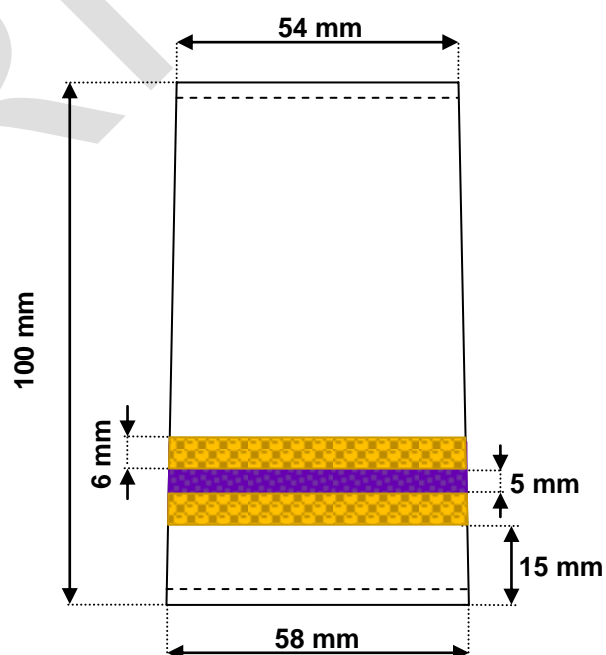
10.3 Certified Technician, 2-Bar



Gold Lurex embroidery thread

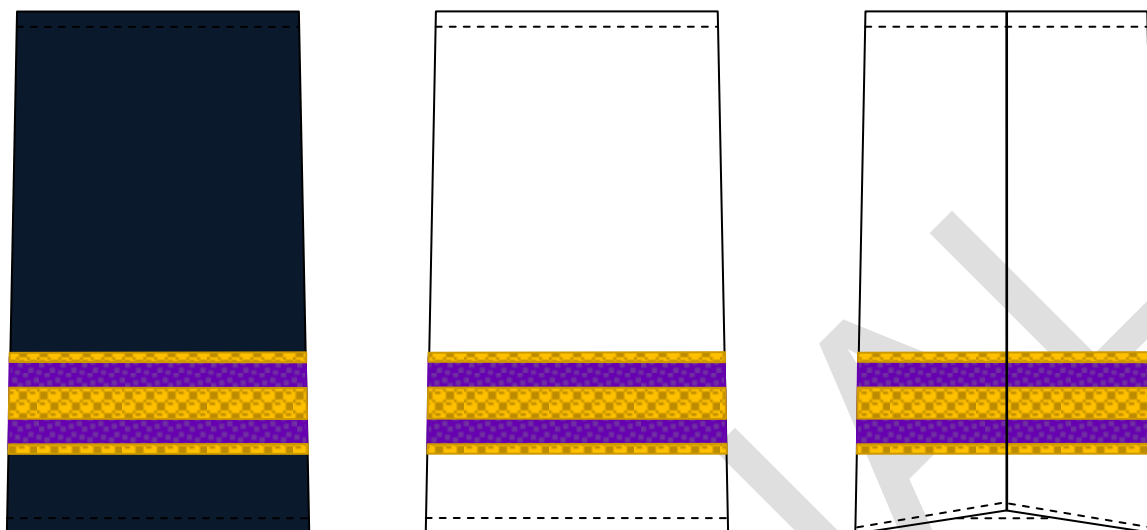


Purple 100% Viscose embroidery thread



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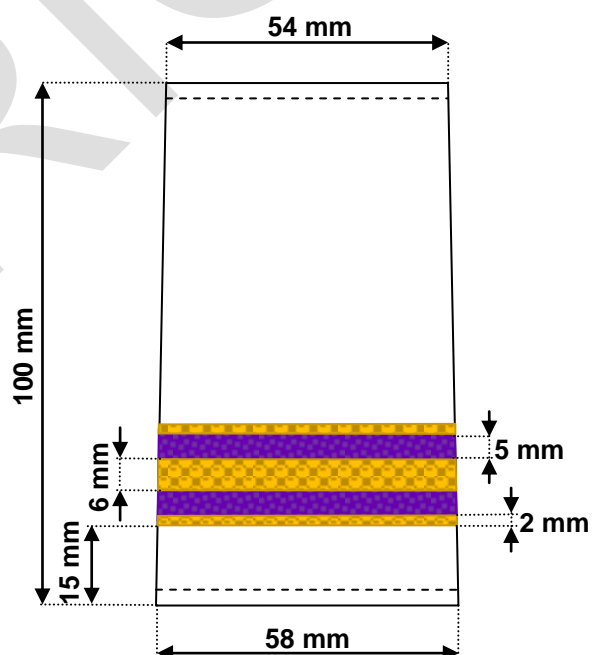
10.4 Certified Technician, 1-Bar



Gold Lurex embroidery thread

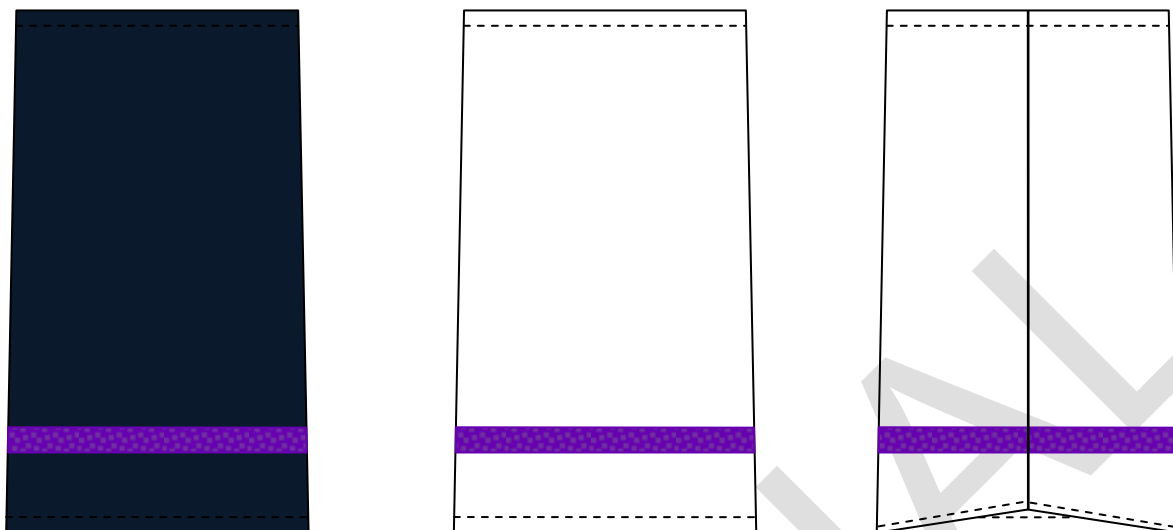


Purple 100% Viscose embroidery thread

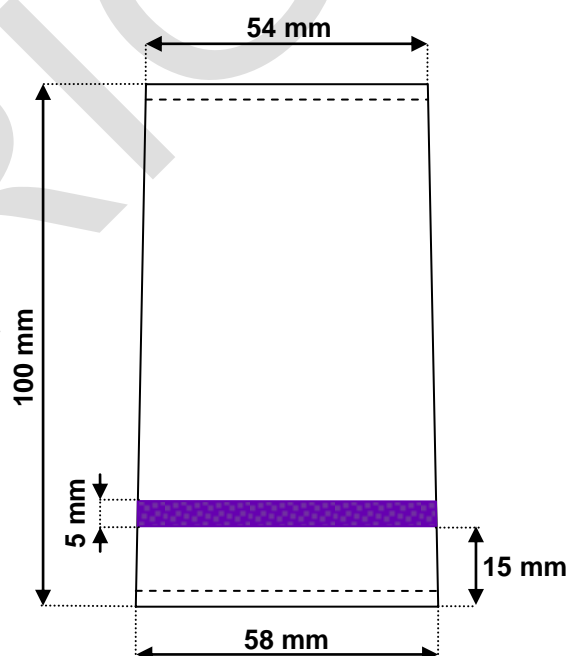


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10.5 Uncertified Technician, Purple Bar



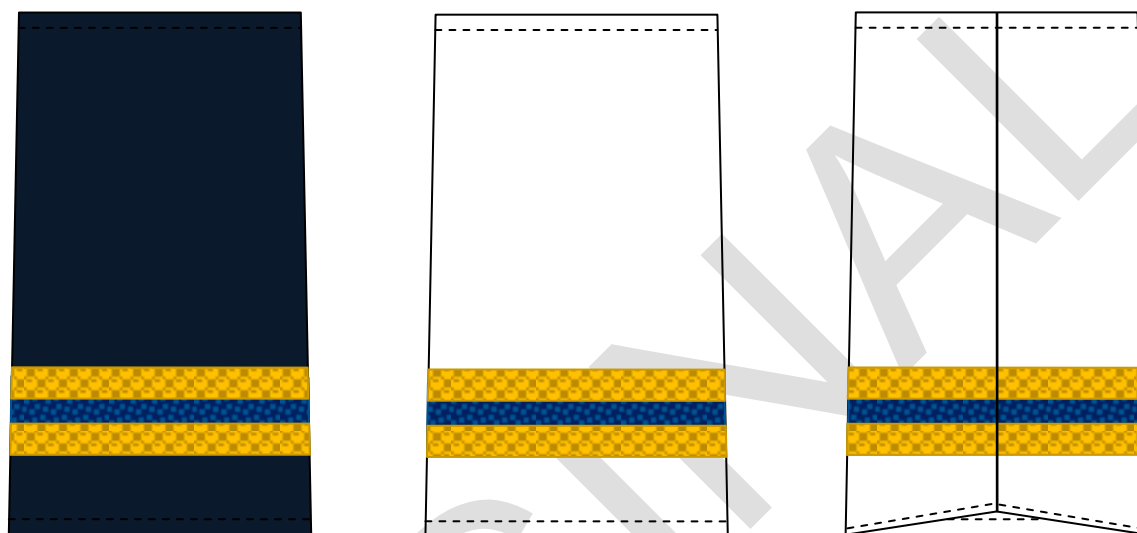
Purple 100% Viscose embroidery thread



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11. Load Master

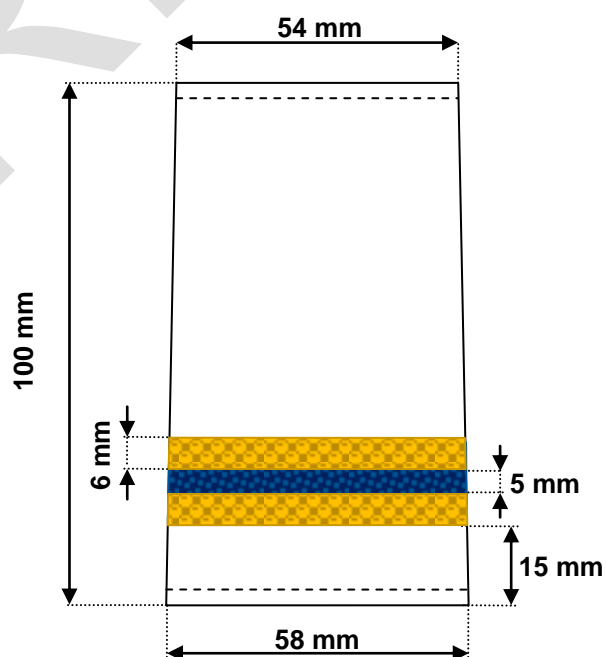
11.1 Team Leader, 2-Bar



Gold Lurex embroidery thread

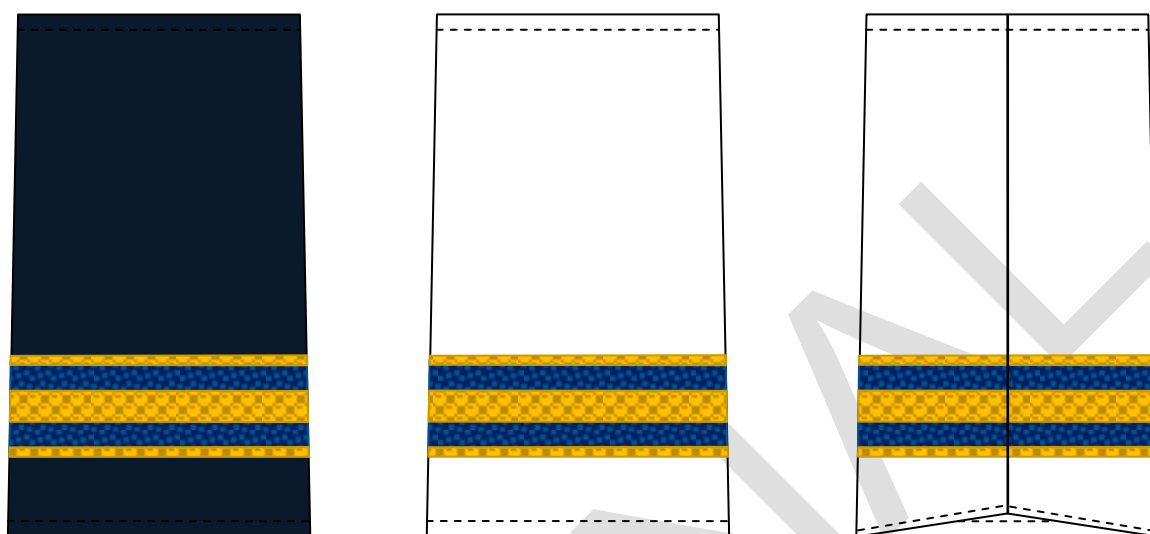


Blue 100% Viscose embroidery thread



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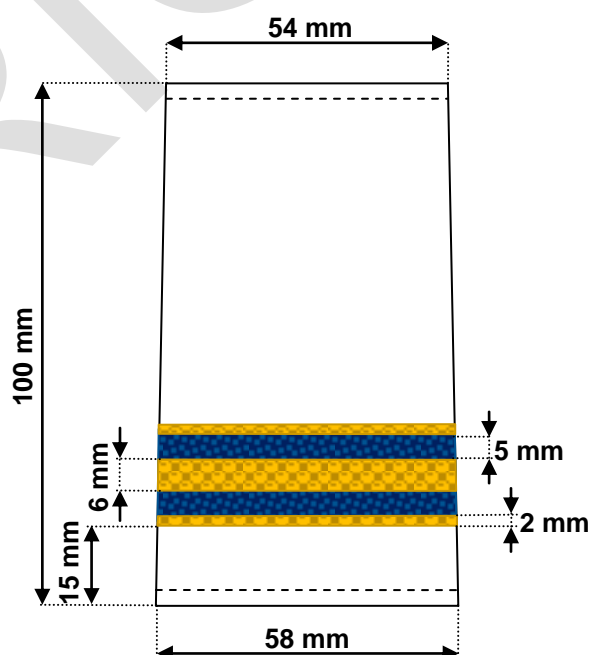
11.2 Load Controller, 1-Bar



Gold Lurex embroidery thread



Blue 100% Viscose embroidery thread



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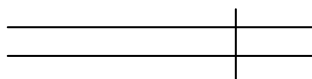
12. Stitches, seams and stitchings

12.1 Stitches

All stitchings: single needle lock stitch

12.2 Seams

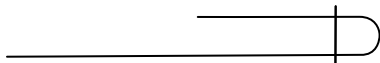
Closing seam: seam type SSa and pressed open



Superimpose two or more plies of material and seam with the appropriate number of rows of stitches positioned at the specified distance(s) from the aligned edges.

12.3 Stitchings

Turned in ends: stitching type EFa



Turn in the specified width at the edge of a ply of material and stitch the turned edge with the appropriate number of rows of stitches.

All raw edges: stitching type EFd-1



Stitch over the edge of a ply of material with one row of stitches.

12.4 Number of stitches

sewing: 40 ± 4 per 10 cm

embroidery: as per sealed sample

13. Packing, care-labelling and marking

NOTE: All tender samples shall be fitted with a printed label displaying the manufacturer's name or trade mark and item description.

13.1 Packing

12.1.1 The epaulettes shall be:

- ♦ delivered in a clean and commercially dry condition
- ♦ packed in pairs in a plastics envelope of suitable size and shape with a pull and press opening
- ♦ so packed that they will not be damaged in transit or in storage
- ♦ unless otherwise specified in the order or contract, packed for transportation in acceptable bulk containers

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12.1.2 Epaulettes:

- ♦ with the same item number shall be packed together in a bulk container (unless quantities ordered are such that packing together of the same item number only is not justified)
- ♦ of different item numbers may also be packed together to accommodate the last part of an order or contract

12.2 Marking of packaging

12.2.1 Small plastics envelopes:

Each small plastics envelope to be clearly marked with the following information:

- ♦ the item number
- ♦ the year of manufacture
- ♦ the manufacturer's name or trademark
- ♦ the order or contract number

12.2.2 Bulk containers:

Each bulk container to have a label securely attached to the outside visible when the containers are stacked and providing the following information in legible and indelible marking:

- ♦ the manufacturer's name or trade mark or both
- ♦ the order number or contract number
- ♦ the item description (designation)
- ♦ the quantity
- ♦ the month and year of manufacture
- ♦ the Item Number
- ♦ the invoice number(s)
- ♦ the Inspection Certificate Number
- ♦ the VAT number of the contractor

12.3 Additional marking

When so required by the South African Airways, epaulettes, envelopes or containers (or any combination of these) to bear information additional to that specified above.

13. Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this specification. All standards are subject to revision and, since any reference to a standard is deemed to be a reference to the latest edition of a standard, parties to agreements based on this specification are encouraged to take steps to ensure the use of the most recent editions of the standards indicated below. Information on currently valid national and international standards may be obtained from Standards South Africa.²

AATCC method 20, *Fiber analysis: Qualitative*. Available from World Wide Web http://www.aatcc.org/Technical_Test_Methods/scopes/tm20.cfm

CKS 129, *Colours for textiles*.

CKS 627, *Fusible interlinings*.

ISO 3175-2, *Textiles – Dry cleaning and finishing – Part 2: Procedures for tetrachloroethene*.

² **SABS: Tel. +27 (0) 12 4287911**
www.sabs.co.za

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SANS 79, *Textiles – Mass per unit area of conditioned fabrics.*

SANS 105-B02/ISO 105-B02, *Textiles – Tests for colour fastness – Part B02: Colour fastness to artificial light: Xenon arc fading lamp test.*

SANS 105-D01/ISO 105-D01, *Textiles – Tests for colour fastness – Part D01: Colour fastness to dry cleaning.*

SANS 105-E04/ISO 105-E04, *Textiles – Tests for colour fastness – Part E04: Colour fastness to perspiration.*

SANS 979, *Textile products – Permanent mothproofing.*

SANS 1362, *Sewing threads.*

SANS 5113, *Non-fibrous material content of wool.*

SANS 5580, *Pesticides: Biological evaluation of mothproof textiles containing wool.*

SANS 5582, *Pesticides: Biological evaluation of dry cleaning durability properties of mothproof textiles containing wool.*

SANS 6009, *Abrasion resistance of textile fabrics (Martindale test).*

SANS 6116, *Resistance of textile fabrics to pilling and fuzzing (Random tumble method).*

SANS 7211-2/ISO 7211-2, *Textiles – Woven fabrics – Construction – Methods of analysis - Part 2: Determination of number of threads per unit length.*

SANS 10371, *Terms and definitions for clothing.*

SANS 13934-1/ISO 13934-1, *Textiles – Tensile properties of fabrics – Part 1: Determination of maximum force and elongation at maximum force using the strip method.*

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ANNEX A

(Normative)

Special conditions of tender

A-1 GENERAL

A-1.1 Unless otherwise stated, the Procurement Authority (or an organization deputed by it) shall be the inspecting authority.

Any applications for deviations from drawings or the specification, or any laid down process, treatment or procedures as set out in this specification, must be made to the SA Airways and verified by the inspection authority. All applications must be submitted in writing.

A-1.2 Three pre-production sample epaulette pairs (three pairs of each item number ordered), shall have been inspected, tested and approved by the inspecting authority before bulk production is commenced. Each pair of these samples shall be accompanied by a trim chart containing a sample of each component material (as given in 6) and the relevant compliance certificates for all components as ***well as for the outer material used***. It shall be the duty of the manufacturer to give adequate notice to the inspecting authority of the availability of these samples.

A-1.3 The epaulettes shall be subject to inspection during the course of manufacture. The inspector shall, during normal working hours, be given all reasonable facilities for carrying out his duties and shall have the right of entry into the contractor's factory and the factory or works of any subcontractor where work on epaulettes supplied to this specification may be in progress

A-1.4 The contractor shall inspect the finished epaulettes for compliance with the specification before submitting them to the inspecting authority for final inspection.

A-1.5 Before acceptance, the epaulettes shall have been inspected and tested by the inspecting authority and found to comply with the requirements of the specification.

A-2 DOCUMENTATION

One container of each consignment shall be marked "DOCUMENTS" and in addition to the epaulettes, shall contain the following:

- a) The packaging slip or delivery note;
- b) where applicable the inspection certificate(s);
- c) a copy of the invoice containing the following information:
 - the order number
 - the financial authority number
 - a full description of the consignment, i.e. item number, quantity, etc

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ANNEX B

(Normative)

CKS 129 Colours

Due to the fact that colours can change over a period of time, any colour standard which has been registered for a period of SEVEN YEARS or more shall be considered obsolete. These standards shall then be allocated an archived status (as opposed to current status) and re-registration shall be required.

NOTE: *Before fabric is sent to SABS for colour registration purposes, the successful bidder shall confirm with SABS whether a submission is required or not.*

A. The following scenarios require a submission of three metres of fabric from the successful bidder:

1. A colour standard is archived.
2. First time registration is required (CKS 129 colour number does not exist).
3. Colour swatch stock at the SABS is no longer available.

B. Requirements for the submission of fabric as identified in A:

1. The colour shall be as agreed upon between the South African Airways and the successful bidder.
2. The fabric shall be used to make new colour swatches which shall be the responsibility of the SABS.
3. The cost of the three metres of fabric shall be incorporated in the relevant bid submission.

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HISTORY SHEET				
Version	DATE	AMENDMENTS/HISTORY	CHECKED	
			NAME	INIT.
1	May 2007	First Release		
2	June 2014	Amend dimensions Allow for embroidery		
3	August 2015	Complete re-do of specification Load master and travelling technicians to be embroidered only Added reference to Petersham ribbon and exact description of mylar lace Amend Item numbers on Load controller and TT Change title of single purple bar epaulette Technicians: 1 and 2-bar are called certified technicians. Add CKS 129 colour for FDC braid		
4	August 2015	Add colourfastness requirements for gold braid and embroidery		

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